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A

TREATISE

ON

THE DISEASES OF CHILDREN,

VOLUME THE THIRD:

ON

THE NATURE AND PROPERTIES OF HUMAN-MILK;

AND THE MANAGEMENT OF

The Nursery.

Price 13*s.* 6*d. boards.*

A

TREATISE

ON THE

DISEASES of CHILDREN,

WITH

Directions

FOR

THE MANAGEMENT OF INFANTS

FROM

THE BIRTH.

By MICHAEL UNDERWOOD, M. D.

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of the
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Physician
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To The British Lying-in Hospital.

IN THREE VOLUMES.

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CONTENTS

OF THE

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PAGE

PREFACE ..... i–iii

INTRODUCTION, On the Nature and Properties of Human-milk 6–68

DIRECTIONS for the MANAGEMENT of INFANTS from the BIRTH.

Dry-nursing, unnatural 69–70

Arguments in favour of it usually futile 71

The

PAGE

The Duty of great attention to Infants 78–79
Hints taken from the irrational Species 80–81
Great Heat and Cold, and strong Light to be avoided 82
On washing of Infants 82–88
On the Cold-bath (Note) 85–88
On the Intertrigo, Chaffings or Excoriations 90
On forcing out the milk from the breasts 93
Errors in regard to the first-clothing of Infants 95–100

OBSERVATIONS on the NON-NATURALS.

On AIR 101
The Snuffles 107
Change of Clothes 107–108
On MEAT and DRINK 109–155
Children require no food immediately after Birth 109
Milk, the most proper of all food 113–121
Infants will pine for a long time after the Breast, when prematurely taken from it 117–120

The

PAGE

The Milk, or Bubby-pot, its excellent contrivance 123–124
Resemblance to the Nipple 128
Objections answered 129–133
Change of food as Children grow older 135–139
Proper times of feeding 140
Proper diet when ill 141–144
On the acescent quality of the food of Infants, their disposition to Wind, and their Remedies 144–147
On the choice of Wet-nurses, and their Diet 148–150
On weaning of Children 150–155
On SLEEP and WATCHING 155–160
Observations on the Cradle 158–160
On MOTION and REST 161–187
Exercise, how important to Health 161–163
Proper time of putting Children on their feet 163–167
Caution in regard to Females 172–174
Inquiry into the fatality amongst the children of the poor, and some attempt towards a remedy proposed .. 169–171
On REST 174–175

On

PAGE

On some slighter natural Deformities with the means of Prevention, and Cure 175–187

On RETENTION and EXCRETION..... 188

Retention and Incontinence of Urine 188–191

Infants bowels should be always open 191–192

On the PASSIONS of the MIND 193–197

Laughter and Crying 193–195

On the Tempers of Wet-nurses 196–197

Alphabetical list of medicines under old and new Names..... 199–201

DIRECTIONS TO THE BINDER.

The Table of different Milks to be placed immediately after the Introduction.

PREFACE.

WHATEVER Splendour the actual Treatment of Diseases may reflect on the Science of Medicine, it, by no means, comprehends the whole of its Province: for Prevention being in every case preferable to Remedies, the Medical Art would be more imperfect than other Sciences, were it devoted only to the latter. In the management of Infants more especially, such a variety of other articles occurs subject to

medical direction, that this work would be peculiarly incomplete if confined merely to the Cure of Disorders. In a view, therefore, to such miscellaneous matters, and certain recurring affections too trifling to be ranked as Diseases, this volume is annexed; and it is hoped, may contain every thing on which the most Inexperienced can wish for information, without being tedious by enlarging upon trifles. In all matters of importance a becoming firmness has been adopted, but I have not equally insisted upon others, wherein the manners of a refined age cannot comply, nor have urged any peculiar modes which the Generality may not adopt. Should any opinion be more obstinately maintained,

tained, it is, probably, in relation to the Aliment moſt adapted to new-born Infants; an article frequently alluded to in the following pages.

In a view to this, an *Introduction* is given on the Nature and Properties of Human-milk, as more especially connected with the subject of this volume; which, it is hoped, will exhibit a Plan as rational in design, as the author is led to believe it has been successful in its application.

INTRODUCTION.

ON THE PROPERTIES OF HUMAN-MILK.

IF facts are the basis of sound reasoning and the source of improvements in science, they will be assiduously cultivated by every investigator of the laws of nature; persuaded that, howsoever misapplied for a season, they must eventually confirm his maxims, or correct his mistakes. In this persuasion, the author's attention has been awakened by several publications, but especially by some later ob-

servations upon *Human-milk*, by Dr. CLARKE of *Dublin*.*

Such a subject, while it arrests the speculation of the natural philosopher, will further claim the physician's attention in regard to the influence which the diet of infants muſt ever have on their health, especially that nourishment which Nature herself hath, in every climate, provided for them, at their birth: for it is only from a due acquaintance with this, that Art is likely to supply the fitteſt substitute when the natural cannot be procured. Nor can the inquiry be deemed superfluous in a treatise embracing both the means of prevention and cure of their diseases, nor form an improper Introduction to this volume. And it being Dr. CLARKE's express design to dispute not only some of the supposed constituent

* Observations on the Properties commonly attributed to *Human-milk*, on the Changes it undergoes in Digestion, and the Diseases supposed to originate from this Source in Infancy. *Transactions of the Royal Irish Academy*, *anno* 1786.

parts

parts and properties of *breaſt-milk*, and especially that of any true curdy principle; but also various ill effects conceived to be produced by it in sucking infants, and the means of relief; I seem to be compelled to take some notice of that work. Indeed, the spirit of inquiry manifeſted in the Essay is truly laudable, and the experiments set on foot are worthy the notice of every practitioner in medicine; not to add, that the establishment of the fact,* whatever it may be, is likely to

* Dr. RUTTY, indeed, made the like experiments in the year 1762, and Professor YOUNG since, though with a less decided opinion, from similar results: and it is presumed, that the experiments made in consequence of the present inquiry, have set this matter in its true and proper light.

How to account for the difference of Opinion from the same experiments, or for their seemingly different results, consistently with the honour of those who profess to have made and reported them, with equal attention and integrity, may be less difficult, perhaps, than might be imagined. In regard to the principal point in debate however, I conceive, that some gentleman have taken certain congelations for true

to become of general use; though practitioners, it is presumed, will not readily agree with Dr. CLARKE in regard to the extent to which he carries his sentiment, any more than in all the inferences he would draw from it.

Indeed, when his Observations fell in my way, I was, from the firſt, not a little surprised at the confidence with which he opposed a sentiment almost universally adopted; and I determined assiduously to investigate the matter for myself. For this, I knew I had opportunities equal to those of Dr. CLARKE, and I pleased myself with the idea of being, at any rate, a certain gainer; as I should, at least, get at a fact which must in the result be

curd, without putting them to the proper test; whilst others, from the like neglect, have overlooked small portions of it, which have been blended with other matters; but especially have too much neglected one obvious, though less common mode of discovering it; or in the few experiments they may have made in that way, have not allowed sufficient time for the curd to form; as will hereafter appear.

favourable

favourable to my general pursuits. I muſt acknowledge, that I was inclined to suspect the Doctor had been mistaken in toto, until repeated experiments, by various means, and under a variety of circumstances convinced me, that there is certainly much less curd in *human-milk* than had been commonly supposed, and that whatever the precise quantity might be, it is not very easily detected by runnets and acids; since in far the greater number of experiments made upon *fresh* milk, not the least could be perceived, though in a few, I seemed to be satisfied at the time, that there was a small portion of true curd.*

Surprised as I, indeed, was at the first result of these experiments, threatening the subversion of an idea, which howsoever unfounded, had been but little suspected; no sooner did the essence of the fact ap-

* Mr. NAVIER long ago, and Dr. FERRIS in his *Harveyan* Dissertation, at *Edin.* anno 1782, have adopted this sentiment.

pear

pear to be established, than my wonder not only ceased, but I conceived there was every reason to imagine that *human-milk* should be very much of the nature Dr. CLARKE had supposed; though he should over-rate, the result of his experiments, or his inferences be unfounded; as I have since proved to be the case. It may be suspected, indeed, that a partiality for a mode of practice that myself and many others had long taken up, might naturally render me anxious to support it at any rate, and to accommodate every fact to my prejudices. However this may be, I found that the attempt, in the present inſtance, required very little pains or application, and terminated in the perfect satisfaction of my own mind; since the like stubborn things (which are met with every day in the treatment of infants) cannot be accounted for but in the way I have all along done; and must evidently demonstrate the existence of an *acid* in the first-passages of infants, of what *nature* soever the food may be

be on which they are supported. How this attempt was executed is now of very little importance to lay before the reader, since the mode and number of experiments I have since made on *human-milk*, prove to a demonstration the constant presence of curdy or true cheesy principles, and must therefore totally subvert the principal arguments and inferences of Dr. CLARKE, were they much more specious than they are. I shall therefore enter no further into such arguments wherewith a long experience has furnished me, respecting the tendency to acidity in the first passages of infants, (which became so necessary upon the supposition of there being *no* curdy principles in human-milk,) than the acknowledged small proportion of true curd may seem to demand; though, (as above hinted) these might be sufficient to prove the point, were there even no curd at all to be discovered in *human-milk*. The smallness of its proportion, however, with the resistance it offers to acids, as justly stated by Dr. CLARKE, is still in my

my opinion as agreeable to reason, as the experiments upon which the sentiment is founded appear to be conclusive.

Mankind, during infancy, is certainly amongst the most feeble of all animals that are nourished in the like mode by the parent, and is liable to more complaints, especially to disorders of the alimentary canal. It is reasonable, therefore, to conceive, that his aliment should be of the moſt easy digestion, light, thin, and very nutricious; at once affording as little labour to the stomach as possible, and easily convertible into chyle, or blood. We accordingly find *human-milk*, though very thin, exceedingly nutricious, owing to the great proportion of the fat or buttery part, and of a saccharine whey, with which it abounds. It is also eaſier of digestion than moſt other milks, owing to the smaller quantity of curd it contains;* which while it is less nutricious than

* *Asses-milk* appears to have less curdy principles than any other milk I have analized.

the

the other parts, is also much more difficultly digested, or converted into chyle. And this I am now persuaded is really the case; *human-milk* certainly contains less curd than most other milks; and the public is much indebted to the researches of Dr. CLARKE, as far as they may have led to the establishment of this fact: but let us be careful that we do not draw as unjust inferences from truth, as have been supposed to arise from error.*

For does it follow, that if a theory be somewise erroneous, our practice must necessarily be wrong? I think not; being perſuaded that experience, and the closest attention to facts, will confirm the general mode of practice enforced in the several editions of this work, and in some part before recommended by HARRIS and

* I am sorry to find Dr. CLARKE expressing a suspicion that his opinion may not be readily embraced by other physicians, There are, doubtless, many who are glad to collect facts from any quarter, and to entertain truth in every form; and such will always be open to every well supported inference from them.

his

his followers. Let us, however, consider the arguments and inferences alledged by Dr. CLARKE against the hypothesis of a prevailing acidity in infants, and noxious coagulation of the milk,* which writers on their complaints have uniformly established; and contrary to Dr. CLARKE, conceive to be a principal source of their complaints.

Not that they attribute almost all the diseases and fatality amongst infants to that source *alone*, as Dr. CLARKE has imagined; who does not allow due weight to other co-operative circumstances they

* By the term coagulation, or curdy matters, made use of in this and other places, it is not meant to assert, that the milk always separates into proper curd; it having been granted, that although it certainly does contain true curd, it is not so readily separated by acids (out of the body) as the curd of quadrupeds is; but as human-milk abounds with an oily or buttery part, it is disposed to jelly or coagulate into a pretty firm mass offensive to an infant's stomach. And this kind of coagulation also takes place out of the stomach, from an admixture of an acid with human-milk, equally as with cows.

mention,

mention, considering them merely as predisponent causes; particularly the extreme delicacy of their frame. For it is certainly through this extreme delicacy, that infants sink under complaints, which to adults are commonly little more than inconveniences, and prove in some respects an advantage, by exempting such habits from the more dangerous disorders of athletics.*

The atony of infants, therefore, whilst it is a predisponent cause, proves likewise an occasion of the severity of their complaints, and of the great fatality attending them; and this fatality arises from disorders of the stomach and alimentary canal: for how very few infants die in the first months, in whom these parts are not, both at *first and last*, the evident seat of the disease; and with what difficulty are many others preserved from similar complaints, especially children brought up by hand?

* *Acidum eructantes non sunt pleuritici.* HIPPOC.

But

But I proceed to the particulars stated by Dr. CLARKE; who having pursued this important subject at some length, and given his arguments every due advantage, I beg leave to bespeak the reader's pardon, if in following him through it, I should seem diffuse, if not tautological, in purposely stating diversified views of facts, in order more clearly to exhibit their decided result.

The first Observation of Dr. CLARKE that I shall notice, regards the fact in question, and upon which he grounds his objections both to the concurrent sentiments and practice of writers on the diseases of infants.

"Women's milk, (says Dr. CLARKE) in a healthy state, contains no coagulable, mucilaginous, or cheesy principles, or that it contains so very little as not to admit of sensible proof."

Coagulating principles, unless that term be used in a very precise and limited sense, every nurse must have frequently observed, at least in their effects; since large

large flakes frequently appear in the matters thrown up from the stomach of unhealthy infants. Whether these congelations be owing to some small portions of curd, or cheesy principle the milk certainly contains, which may possibly be too small to account for their frequency and quantity;) or to an oil, fat, or butter, is not of importance to the fact. For *human-milk* certainly contains a much larger proportion of cream, or fat, than cow's milk does, as is evident both from the natural, as well as an artificial separation of it by different kinds of acids. And perhaps this, as I shall have occasion to remark, might serve to account for the symptoms of acidity, and the rancid and acid matter so prevalent in infants, and for the various effects of absorbent, alcaline, and lightly cordial remedies, without a reference to any *true curdy principles* in *human-milk*; which it is presumed, however, Dr. CLARKE in this place precisely intends.

I proceed, therefore, to observe, that the assertion of Dr. CLARKE as to this great point in question, is, in no view, strictly just; since it is insisted, that there certainly is a portion of true curd in human-milk; which as Dr. YOUNG has remarked, separates spontaneously. Dr. CLARKE in his remark upon this observation, I know not why, concludes that it is stated by Dr. YOUNG merely as "matter of opinion, and not the result of any experiment." Nothing further, however, is necessary than *to make it*, and to wait a sufficient time for the result; no particular degree of heat being necessary, though so stated by Dr. YOUNG. But whence it is, that runnets, acids and spirits do not always separate any very sensible quantity of this curd in the course of eight and forty hours, as they constantly do from cow's milk, and wherefore a much longer time seems to be necessary for its spontaneous separation, I am not chymist enough to offer any

any opinion, and therefore confine myself to the fact: observing, however, that this peculiarity is, doubtless, to answer some wise purpose, and very probably, may be a principal reason of women's-milk agreeing so much better with infants, than the milk of every other animal; and it is hoped, may in time furniſh some very useful practical observations.

Dr. CLARKE's next Observation relates to the time, in which *human-milk* becomes sour: upon which he remarks thus.

"If we find *human-milk* out of the body so very slow in running into an acescent state, does it not afford strong presumptive evidence, that the milk of nurses cannot be so very prone to run into acidity in the stomach of infants as authors endeavour to persuade us?"

To this it may be replied, that though *human-milk*, out of the body, does not, indeed, run into an acescent state so soon as cow's milk does, (and for the full establiſhment of this fact we are much in-

debted to Dr. CLARKE;) yet I think, that *Experience*, (which muſt be allowed to be full as good evidence as any *Experiments* can be) as fully demonstrates, that like many other milks, and moſt vegetables, it is much more disposed to occasion acidity in the stomach, than food prepared from pure animal juices. Moreover, it is not usually so slow in acquiring an evident acidity, even out of the body, as might be conceived from some experiments Dr. CLARKE has industriously made, and I doubt not as fairly reported; for at the end of four days, and even sooner, I have sometimes met with it full as sour to the taste as cow's milk, kept the same length of time, though this is not usually the case;* and when become putrid (by that test) which I have known it to be in ten days, it has been equally so with cow's-milk.† And surely it is not imagined,

* Dr. CLARKE also takes notice of a variety in this respect.

† It is worthy of remark, that so far from *human milk* being *usually* indisposed to be much changed by long

imagined, that human, or any other milk, remains on the stomach long enough to become acid from that spontaneous separation of parts which takes place in the dairy; and therefore the question is not so much, in what *time* it will become acid, as to what *degree*, or by what *means*, this change may be effected: and in these respects, it is found to differ little from the milk of quadrupeds. For though runnets and acids do not always separate true curd in any sensible quantity from breast-milk, *out* of the body; yet such curd being found in the pukings of infants when moſt vexed with acidity, (as

long keeping, as Dr. CLARKE has observed, it has not only always become putrid before I have thrown it away; but that about three quarters of a pint which I kept (in a bason) at the hospital, only a fortnight, for the purpose of collecting the curd by a spontaneous separation, had rendered the room, for more than a week, sensibly offensive to every one who entered it; but was so very fetid when I strained it off, that the matron who assisted me, being less accustomed to putrid effluvia than I have been, was disgusted by it exceedingly.

will be stated in its place) seems to demonstrate the *means* of its separation, as well as the *fact* and *degree*.

Dr. CLARKE, indeed, speaks of human-milk kept in a phial for more than two years, at the end of which time it was become only moderately acid; whereas I have often found it very sour, according to his own criteria with stained paper, in four or five days; so that one would be led to suspect, that like putrid waters, the milk must have depurated itself by some kind of fermentation. And though it was rather ludicrously that this idea first occurred to my mind, I have been since disposed to think, that both human and other milks, when preserved from the air, are capable of such changes; having observed both woman's and cow's milk, at the end of many weeks, become entirely without taste or odour.* The latter

* In further vindication of the above sentiments, the author may, at least, offer the following statement; for the accuracy of which the reader's implicit credit is

latter kept on my mantle-piece, over a large fire, has not been fetid at the end of

is requested. It respects several portions of *human* and *cows* milk, with observations on their changes taken precisely as dated below.

On one portion, preserved in a phial, and well corked, it is noted—

Human-milk, procured, Nov. 22, 1790.
Nov. 25 Now, rather tart to the *taste.*
26 very sour.
27 not fetid to the *taste.*
28 *smells* very fetid.
29 fetid *taste.*
1791. Jan. 1. *very* fetid, now.

I examined this milk just before this volume went to the press, (in March 1795, not having noticed it before for near a twelvemonth;) and found it turned of a dirty brown colour, and *smelling* exceedingly *fetid.*

Another portion of *human-milk*, procured within a few days of the above-mentioned, and preserved in a phial, no better corked, did not at this time *smell* at all *fetid*, nor disagreeably *acid*, although it had so smelt and tasted, a long time before; was not changed in its colour like the former, but seemed merely to have undergone the natural separation into curd and whey.

(I carefully examined these two portions of milk, Nov. 11th, 1796; and found them in nowise changed since the former examination in March 1795.)

of five days, and was by no means more offensively acid to the taste, than I have known human-milk become in four days. And it is further worthy of remark, that out of several parcels of human-milk, preserved under precisely similar circum-

(While this work was in the press May 1799, I examined these portions again, and could be sensible of no change.

A portion of *cows* milk drawn a month after the first-mentioned, I found at this time (March 1795, changed exactly in the like manner in its colour, and decidedly more offensively *fetid* in *smell.*

(This portion on the 11th Nov. 1797, was still most decidedly more offensively *fetid* in *smell* than the *human-milk.*) May 1799, it was in the same state.)

Human-milk drawn a few days after the *cows*, was at the same time found preserving its colour, having only separated into curd and whey, and without the least *acid*, or *putrid smell*, and having no more acid *taste* than *cow's-milk*, drawn in summer, usually has on the second day; nor was there any noise nor fermentation to be perceived from hastily drawing out the cork, as there was from both the *human* and *cows* milks which had changed their colour.

(On Nov. 11th 1797, this portion also continued in the state above described.) (And in May 1799, it was nowise changed.)

stances,

stances, some became very sour and even putrid to the taste, several days before the others seemed to be at all changed. And as this variety occurred under repeated experiments, it may assist in accounting both for the frequency of bowel complaints in some sucking infants which other children are free from, and for the frequent good or bad effects of a change of milk, whether occasional or more permanent: and has not every physician of experience seen infants frequently thrown into tormina immediately after coming from the breaſt of an unhealthy mother, or one who has but little milk?

In regard to the means by which this acescency may be produced, we know very well, how very small a portion of the prepared calf's stomach is requisite for making sufficient runnet to separate the curd from a large quantity of milk, and communicate acescency to the whey; and is it at all probable, that the infantile gastric juices, assisted by the natural action of the stomach, by surrounding and mixing

mixing with the milk in every point, may operate much more powerfully upon it, and dispose it to become so sour and curdy,* as to offend that organ, if it should not soon pass into the intestines ;† as it is presumed it ought always to do. Moreover, acidity seems to be one of the states into which all animal and vegetable substances naturally, or very frequently run,‡ in the course of digestion or fermentation,

* It is elsewhere observed, that the separation of the curd from the whey is the natural process of digestion.

† In proof of the powerful operation of the gastric juices, while in the stomach, I may here advert to the well-known fact of that viscus being frequently found corroded a few hours after death, (as I have myself seen it ;) and I imagine, it is generally, though not universally, believed in this day, that the corrosion has taken place subsequent thereto, and that the gastric juices have only acted upon that part, as they would upon any other animal substance divested of the vital principle.

‡ Perhaps this may not be the proper and natural course of digestion, as Dr. GEORGE FORDYCE has taken great pains to demonstrate ;) yet are the first-passages in most people so disposed at times, that through

mentation, equally constantly with that putridity or fetor which precedes their dissolution, or separation into first principles; and therefore in a certain degree, probably ought to take place in the stomach or small intestines, as the fetor does in the lower bowels. The latter is never so great in infants as it is in older subjects, though adults should for a time live only on a vegetable or milk diet. A principal reason, probably, is, that the bile is weaker in infants; but being at the same time a less powerful corrector of acidity, it is likely, they may be, on that account, more disposed to the latter; and, perhaps, ought to be. Nor can I see, wherefore that very probable evidence of an abundant acidity in the first-passages of infants arising from the very sour smell, and curdy appearance of both the

through indigestion, acid matters are very commonly formed. And it is worthy of remark, that the late Mr. JOHN HUNTER always found the gastric juices lightly acid in every healthy animal that he examined.

vomitings

vomitings and stools of many infants, and the *uniform relief* afforded them by a proper use of *absorbent* and *alkaline remedies*, should not have much more weight in the argument, than can be brought against it from experiments made on human-milk, out of the body, and its acknowledged indisposedness to turn sour so soon as cow's-milk: for we know, with what extreme caution we ought to apply both chemical and physiological experiments to the explanation of the phenomena of diseases. Not to insist again in this place upon the idea already suggested, that breast-milk is not supposed to remain long enough on the stomach to separate into curd spontaneously, in the manner of cow's-milk kept in a dairy; it is sufficient to advert to facts, both the smell and curdy appearance mentioned above, and the relief afforded by medicine, being exactly alike in all indisposed sucking-infants, as in children who are brought up by hand, although the latter are, indeed, more frequently

afflicted

afflicted with such bowel complaints. The great difficulty also of adapting food to infants brought up by hand; and the frequent recurrence of all the ordinary symptoms of indigestion, with the relief frequently afforded them by broths; may serve to strengthen the idea of a disposition in the first-passages to generate wind and acidity in the digestion of their food, and to coagulate every kind of aliment capable of coagulation by the gastric juices, especially if not in their most natural or healthy state.

But as so much of Dr. CLARKE's argument turns upon there being very little or no *curd* in human-milk, it may be aſked, is it, indeed, a certain fact, that the flaky matters brought off the stomach of infants nourished by cow's-milk, is usually *proper curd*, any more than that ejected by children nourished at the breast? for it is possible it may be the fat, or buttery part, or only a very small portion of proper curd, in the one case as well as the other: and if so, the whole force of the

the Doctor's arguments, and his consequent objections to the popular plan of treatment may, possibly, fall to the ground; for the symptoms, complaints and remedies, in both cases, it has been said, are the same, and are well accounted for by a supposed prevalent acidity in the first-passages, and a proneness of their contents to be, in some sort, curdled by it.* Of the former I have incontestible proofs in several instances, in the pukings of infants nourished only by breast-milk, which changed blue-paper red, upon being applied to it the moment they were brought off the stomach.

For the like certain detection of true curd, I endeavoured for some time to-

* That the acid of the stomach is capable of forming *proper curd* I have no doubt, having noticed it frequently, and, indeed, having now by me, preserved in spirits, a portion of above an inch in length, and half an inch in thickness, which was many years ago puked up by an infant I was attending; but whether the child was brought up by hand, or not, I do not now at all recollect.—While the present edition was in the press, another little patient threw up a like piece.

gether

gether to make experiments at the hospital, upon the pukings of infants nourished only at the breast; but either the nurses there did not attend sufficiently to it, or the quantity they could preserve was always too small, or too much blended with other matters to ascertain, with precision, whether they contained any true curd or not. But since that time an opportunity presented in private practice, in an infant who I was well assured was nourished only by the breast. Having sucked very plentifully, the child became sick, and throwing up a mouthful of strong curd, I took up a lump of it, about the size of a nutmeg, which adhered together firmly, and was pretty free from other matters; leaving behind in the bason a larger quantity divided into small portions, and too much entangled with a viscid phlegm to answer my purpose. The portion I took out, together with some slimy matter adhering to it, weighed twenty grains, and when separated from every thing that could

could be squeezed from it, or evaporated by heat, exhibited one grain of hard, caseous matter, which exposed to the flame of a candle burned, and smelt like coarse cheese; but being before divested of all its oil or butter, was incapable of being melted. And according to similar experiments made upon human-curd, dried in different degrees, I imagine that the above mentioned portion, previous to its being reduced to the consistence of hard cheese, might contain six or eight grains of soft curd.

I think this may be considered as a decisive proof, that the gastric juice can separate curd from breast-milk in the stomach of infants, and I believe is no uncommon thing;* nor was it long before I met

* By this mean, as I have elsewhere remarked, that in the ordinary course of digestion, the thicker parts are always separated from the whey; but as breast-milk abounds with oil or butter, the viscid matters thrown up often appear more like clotted-cream than true curd: nevertheless, either from the milk remaining for an undue time in the stomach; or from an excess

I met with another instance equally satisfactory. This infant at eight months old was attacked with severe peripneumonic ſymptoms, which were at that time epidemic among children; and ſeveral times threw up curdy matters ſoon after taking the breast, which was its only nourishment. The nurse twice preserved the cloth upon which they had been received, from which I scraped them, and after properly pressing and drying them, I found, that about the one third part turned out to be pure caseous matter, burning in a candle, and

ceſs of acidity; or perhaps other circumstances concerned in digestion not always known to us, the separation of the component parts becomes sometimes more complete, and true curd appears. How far this may be owing to infants being in an ill state of health, to fever in particular; or simply to weak digestive powers, and a depraved state of the gastric juice; time and attention to their complaints may possibly discover: but at present I am inclined to think, that the gastric juices, (which are at all times lightly acid, always possess this property, as they certainly do of separating the curdy part of *cow's* milk, if it should happen to stay a sufficient time on the stomach. This we also know to be the case with many adults.

 inſoluble

inſoluble like the former; and in this hard and dry form, weighed a grain and a half.*

Now, if by the above, and other arguments and facts, it should appear, that human-milk, from whatever cause, does actually become sour and curdy, in different ways, and that infants are frequently injured by it; the less disposed thereto it may naturally be, the more we may, indeed, be led to admire the wisdom of Providence, that women's milk should, in that respect, differ from the milk of many other animals; yet mere presumptive evidence against its frequently turning sour, in the stomach of infants, cannot invalidate the fact.

Dr. CLARKE himself, indeed, seems to be aware that there may be reasons for such a supposition, and therefore says,

* My reason for evaporating the ſoft parts of the curdy matter ſo completely, by exposure to a ſtrong heat; was to demonſtrate beyond all doubt that it contained *true curd*, by bringing it to the ſtate of the coarseſt kind of cheeſe, in which there is no oil or butter.

" In

" In the adult state, we know that there are few morbid causes less noxious to the human body than acidity, and few more subject to the controul of medicine."

This position though in a certain sense, a very fair one, is not wholly so, when taken with all the inferences which Dr. CLARKE would deduce from it: for if the acidity be very great, and the cause permanent, (as is sometimes the case) though alkalis may be administered in sufficient quantity to neutralize the acid; the acidity returns again, and prevails even for years, in spite of the use of every kind of alkali, of columba-root, bark, steel, and other tonics, unless the state of the stomach be changed by them, and the digestive powers strengthened. Indigestion naturally produces acidity, and is increased by it, as we see in many pregnant women, and in various affections of the stomach, particularly when it is diseased in a morbid way.—A gentleman who died of a schirrhus in the stomach, which I after-

wards examined, was tormented for the last six months of his life, with an incessant acidity, which, though often relieved, especially at the beginning, by magnesia, aqua kali, natron ppt. and other similar remedies, was never for one hour entirely removed; so that he spat up acid matters all the day long, and died, after a very tedious illness, perfectly emaciated, though he took a sufficient quantity of food of different kinds.

Dr. CLARKE goes on to make further concessions.

"But granting (says he) such acidity to prevail in infants, we are in possession of many harmless medicines (called absorbents) capable of neutralizing acids, and thus forming innocent *compounds*."

We have, indeed, many *useful* remedies in such cases, but none that will certainly remove the complaint, either in infants or adults, until the state of the stomach be changed; which in infants is often effected by time. For comparatively light as the evils of a disposition to

to acidity most certainly are, when it is light or transient, it becomes even in adults a source of manifold infirmities, when depending upon some permanent cause, as has been above stated, which cannot fail occasioning an almost daily return of every troublesome symptom. A viscid phlegm also, instead of a harmless compound, often results from the alkaline remedies and natural acid, (commixed, as they may be with other heterogeneous matter) which though insipid, is very indigestible; and at other times, a more offensive acrid matter is formed in the stomach of many adults, and is with difficulty got rid of where the digestion is weak; and is continually adding to the complaint. Every practitioner must have met with many such cases; and from one more immediately under my eye, whereby I was for a long time witness to the effect of an atonic state of the stomach, I can speak very confidently to this point. This patient was of a spare, and delicate habit, very sober, and re-

markably free from almost every complaint, but those immediately arising from a weak stomach, as it is called. This sensible organ, however, was easily put out of order, especially by vegetables, milk, and similar things disposed to generate wind or acescency in their digestion, and was at such times loaded with acidity; which though often corrected by alkalis and absorbents, the stomach would, at other times, eject matters in so very acrid a state as would instantly render the fauces of a deep scarlet hue, produce soreness of the throat, falling of the palatum molle, excessive hoarseness, and some difficulty in swallowing, which would remain for many hours. After long vomiting, a bitter matter would come up, sometimes of a light, at others, of a deep green colour; but rarely yellow, though evidently bilious. Sometimes, upon taking alkalis and absorbents previously to vomiting, the acid would be neutralized, at others, no quantity would render the juices bland; but instead of an acid, a heavy, acrid,

and

and most viscid phlegm would be ejected, inflaming or flaying the fauces, in the manner just mentioned, and in this state no kind of medicine had any good effect; though previous to the *acid* matter being changed into this *acrid* state, alkalis and absorbents very frequently prevented vomiting; which, however, nothing could do after the contents of the stomach lost their *acidity*, and became *acrid:* so far were they from being usually converted into a *harmless compound.* It was only after being many years tormented in this way, and having daily recourse to alkaline and absorbent remedies, columba and bark, joined with steel, and other powerful tonics, with exercise and a scrupulous attention to his diet, that he was sensible of any abiding amendment;* though from the great benefit he at length received, by a strict adherence to such a plan, it may be presumed he had no morbid af-

* This, perhaps, might be further promoted, by his becoming now full forty years of age.

fection of the stomach, though that had been often suspected.

Excess of acidity, and an acrid, ropy phlegm are, indeed, the well known attendants on an imperfect digestion, and will recur in many adults, feed on whatever they may;* though the evil must, doubtless, be increased by certain kinds of aliments; and of that class are those administered to infants. If adults, therefore of a similar habit to that just now stated, though in the end often restored to perfect health, may continue for a long time greatly tormented, whilst the most powerful correctors of acidity, and known

* I conceive, that this habitual acid affords a too great, and improper stimulus to the glands of the stomach, exciting both a superabundant and morbid secretion. By this means, the gastric juice is oftentimes rendered exceedingly viscid, (in the manner of the secretion from SNEIDER's membrane from the stimulus of a cold) or afterwards becomes thus tenacious from mixing with the acid, and ill-digested contents of the stomach. This seems probable, from the vast quantities of this viscid and acrid matter which, it has been observed, people long vexed with acidity will sometimes throw off the stomach for hours together, and frequently for several successive days.

tonics

tonics are had recourse to; and if improper food be occasionally received into the stomach, their complaints will at such times be greatly exasperated; wherefore should it be supposed, that delicate infants must always be restored, if the breaſt-milk, as well as other nutriments on which they may feed, be confessedly, to a certain degree, disposed to add to the complaint? And can it be urged from any experiments made on human-milk, or will Dr. CLARKE or others affirm, that it is so utterly unlike every other milk, and even so much more ant-acid than animal food, that it has nothing in it likely to become sour (save in very weakly children) by an admixture with the gastric juice?

I now proceed to Dr. CLARKE's remarks respecting the green colour sometimes observed in infants stools. Dr. CLARKE doubts of the existence of the supposed predominant acid, of which that colour has been imagined to afford some evidence, because he says, common acids do not give that tinge to the bile, and that

that only mineral acids give it a green colour.

But as *some* kinds of acids can produce this effect, it cannot surely be proved, that the natural acid of the stomach and bowels cannot effect the like; especially when it is considered, that in adult persons affected with dyspepsia, *bitter* matters of a *green* colour are frequently ejected after very acid vomitings, as it has just now been remarked. And though as Dr. CLARKE observes in a quotation from SYDENHAM, "porraceous matters are ejected by children who have been over-purged or vomited, and by healthy adult persons when sea-sick," yet the like appearances under such circumstances can scarcely destroy the conclusion; since all such violent agitations of the chylopoëtic viscera, by disordering and perverting their due and natural action, upon which the sane state of their secretions indubitably depends, may sufficiently account for the sudden forming of acid, acrid, or any other unnatural

ral and unhealthy gastric juice, as well as for the vomiting up of bile, which in its passage will certainly be mixed with it, and be somewise changed from its natural colour. And, indeed, SYDENHAM's reasoning upon this subject, a little further on, is of a similar kind, though expressing himself in the language of that day, he attributes this foreign, or morbid secretion, to a confusion of the animal spirits; which, indeed, for any thing I know, may be a remote cause of it. It should likewise be considered, that it is during the time that infants appear to be affected by a predominant acid in the first-passages, that the dejections and vomitings are of this green colour. Upon the whole, therefore, the prevalently sour smell of some infants stools, which Dr. CLARKE thinks so very nugatory an argument, seems to afford much better evidence of the presence of an acid, than his arguments can be against the change of colour by such a mean. Moreover, I may affirm, that the *green* stools of sucking infants,

infants, and even some stools that are of a bright *yellow* colour, do certainly contain an acid, having detected it under repeated experiments made with blue paper, the instant the stools have come away ;* however it might turn out in the experiments made by Dr. CLARKE. And I may therefore, possibly, be allowed in my turn, to express some surprise at the confident manner in which Dr. CLARKE has taken upon him to dispute the fact.

But Dr. CLARKE observes further, that, " Those writers who have laid the greatest stress on such appearances in infancy, do not pretend to apply the information to be derived from thence to the treatment of the diseases of adults."

I, probably, do not fully comprehend the import of this observation; for the information, *mutatis mutandis* is moſt certainly applicable, and the complaints of each arising from acidity are capable of

* These experiments were made before witnesses at the *British-Lying-in-hospital.*

cure

cure or relief, in the same way, *viz.* by alkalis, tonics, and aromatics, with a well adjusted diet. I have intimated, that the doctrine is *partially* applicable, because the bile of adults being more exalted and acrid, or otherwise stronger, (if I may so speak) may not upon meeting with the like acid, change their stools just to the same colour of those of infants; nevertheless, the stools of adult persons, tormented with acidity, especially under peculiar aggravations, are of a much *paler* colour, than those of people of much stronger digestive powers, and possibly, through a deficiency of bile. And here it may not be improper to consider the very material circumstance of the very different diet to which adults are addicted, as well as the medicines they may take, which, it is well known, often affect the colour and smell both of the stools and urine in the course of a few hours, as the stools of infants (though ever so green before) are changed in their colour upon taking rhubarb, saffron,

fron, and similar medicines;* while the diet of infants being perfectly simple, the contents of the bowels are likely to acquire no other colour than that of the bile itself, (as is actually the case in a healthy child) or such as through their accidental property may be chemically induced by the admixture. Not to add, that the urine in healthy adults is usually of a much deeper colour than that of infants, and is also not unfrequently occasioned by a certain diet as well as by medicines; and varies with them. And perhaps it may be from a similar natural tendency to a very *dark* colour, that we find the first stools of new-born infants are not truly green, though often of a *greenish-black*; nevertheless, there is sufficient acidity in their gastric juices to occasion the stools voided previous to in-

* Spinnage and other things impart their colour to the stools of young children, in a way they do not to healthy adults; and perhaps, from their digestive powers being weaker.

fants

fants taking any kind of food, to tinge blue paper red, (as I have found by careful experiments) though such stools contain a very large proportion of bile.

These observations, it is imagined, may apply to Dr. CLARKE's remarks in regard to the colour of the stools of adult persons, vexed with acidity, which he says are not of a green colour like those of infants. And in respect to ejections from the stomach when so tinged, it seems to have been a constant remark, that bile lodged there has been diluted by an acid; to both of which, physicians are in the habit of administering their appropriate remedies.

DOCTOR CLARKE goes on to say,

" Upon the whole, I hope it will appear probable to the generality of readers, that predominate acidity in the first-passages, is by no means so general, as to be considered as the only, or even principal source of infantile disorders; that such a morbid cause may now and then occur in infancy, as in adult age, from a weakness

weakness of the stomach, costiveness, or improper food, can admit of no doubt."

This inference is surely far from being made out from all that has been advanced.—But let us consider of what the arguments consist. " Human-milk out of the body, does not turn acid so soon as cow's-milk does," (but cow's-milk requires twenty-four hours or more;) " nor the common acids curdling the milk of quadrupeds produce scarce any sensible curd from human-milk; that only mineral acids will tinge the bile of a green colour; and that in the adult state few morbid causes are less noxious than acidity, or more under the controul of medicine." To conclude from hence, that acidity in the first passages ought not to be considered as so general a cause of infantile complaints, or to be of such dangerous consequence as it may usually have been imagined, does not appear to me to be perfectly founded; nor to be evidence sufficient to subvert the arguments and evidence adduced in support of that sentiment,

timent, in connexion with the acknowledged atony of infants. It is true, indeed, that *ex nihilo nihil fit*.—If there be no curdy principles in human-milk, no species of acid in the stomach can bring curd out of it; yet may the combination of an acid and milk offend the stomach otherwise. It has been observed, that all common vegetables, and even bread, are often very imperfectly digested by adult persons with a stomach overcharged with acidity, yet is no part of such aliment necessarily converted into any thing like *true curd*; though the stomach in all such persons is as certainly offended by the *curdling* of cow's-milk.

Nevertheless, I have hinted long ago,* that simple acidity may not, in the first instance, or in a general way, be necessarily so injurious as some writers have contended, and that infants suffer more severely from an acrid matter, (less capable of correction by absorbents, than by

* In the very first edition of the subsequent Tract.

aromatics,) which though it originates from a predominant acid, generally becomes so very offensive in conjunction with some other cause, be that a peculiar atony, or otherwise; robust children being always far less disordered, though not wholly free from some of the vexatious symptoms of acidity. Upon the whole, however, I am persuaded that acidity is eventually a frequent source of mischief, and that because it is so constant a consequence, and further aggravation, of indigestion, in such adults as have what is called a weak stomach. For it is, perhaps, only in adults of a lax fibre, approaching to the atony of infants, and not in athletics, that we meet with that morbid source which Dr. CLARKE observes sometimes occurs in adult persons. And if the stomach, or digestion of infants be naturally weak, why should we not expect to find them peculiarly liable to acidity and its consequences? the state of the stomach being certainly the grand source of general good, or bad health, at every age.

And,

And, indeed, were I to say no more than that infants, in proportion to the greater weakness of their digestion, must be more disposed to acidity than adults, with many of whom a milk diet *always* disagrees, (and is the infants' only nouriſhment) it were saying a great deal towards subverting the whole that has been advanced by Dr. CLARKE against its prevalency, in connexion with the general atony of all young infants, being a principal source of their complaints.*

Dr.

* Since the former edition of this work, and subsequent to two or three letters passing between us, Dr. CLARKE has offered a few observations on some infantile complaints in the last volume of the *Transactions of the Royal Irish Academy*. All that concerns the present debate, is, an observation on green stools voided by an infant he was attending, and a very curious observation it is; the nurse having informed him, that they became of a yellow colour after the cloths had lain some time in a corner of the room: and this report the Doctor offers to the consideration of those who conceive the green colour to depend upon some acidity in the first-passages; which he thinks the above change may render further suspicious.

That the stools of infants, not in perfect health,

Dr. CLARKE concludes by observing, that "the young of all the ruminant animals, fed on milk of a much more acescent nature, suffer no inconvenience from this source." To such laconic arguments,

though voided of a bright yellow colour, will turn green upon being kept twelve, or twenty-four hours, must have been observed by every one conversant with sick children; but I must confess that I never before have heard of green stools turning yellow, whatever the infant's complaint may have been. I have now been in the habit of paying attention to children's stools for many years; and in many instances, when not in a daily attendance, a great number of cloths have often been preserved, for two or three days, for my inspection; so that, were such a change common, I am persuaded I could not have failed to notice it. What the particular cloths shewn to Dr. CLARKE might meet with on the floor, in the corner of the room, to account for such a change; or what other unusual occurrence there might be in their previous washing, I can say nothing to; therefore for the present shall only remark, that such important appearances ought to be frequently observed, and accounted for in some better manner than the report of an individual nurse, before any argument can be founded on them to subvert the fair inference from innumerable facts.

I think

I think it might be fairly replied, that many ruminant animals can eat, and digest, *bones*; and hop about likewise when their own bones are broken or dislocated, without manifest injury, or much expression of pain. And in this view I might adduce the remark, made elsewhere,* on the rank which animals severally hold in the scale of beings: it being very evident, that besides the ground of comparative health and disease arising from the bulk and strength of various animals, there is that of their several ranks in that scale, commencing with man, the head, and extending from the invaluable sheep, the cow, or the horse, to the lowest of our domeſtic animals, and to reptiles; the more noble and useful (from whatever cause) being, I believe, uniformly subject to the most and severest disorders. Thus the fragile worm daily survives ſome kinds of injuries, which the sturdy ox could not; while the delicate infant would

* Vol. I. pages, 7, 8. *Note.*

sink under that, which the lamb could with safety endure.—But what should we learn, on the present occasion, by pursuing such comparisons? "Man (said one) is not a fly"—no, nor yet a tyger.—Such arguments, at the best, are very equivocal, and one might be set against another without end. We do not, for instance, suspect that quadrupeds in a state of pregnancy, are afflicted with acidity or heartburn any more than their young are from the curdy principles of the milk by which they are nourished; but we are certain, that many breeding women are tormented with such complaints for a great length of time, feed on whatever they may. It is confessed also, that the milk of quadrupeds abounds with cheesy principles, and that human-milk contains a far less proportion; (or according to our author, none:) here then is a glaring disparity in the very point at issue; and from which the inference drawn by Dr. CLARKE, (were even his experiments conclusive) does not seem more natural than the observation

observation already advanced on the wisdom of Providence in abating of that quality in human-milk, because a greater propensity to acidity, or excess of a cheesy principle, must, from the atony of infants, render such a quality peculiarly noxious to them.

It has been observed, however, that I can myself no longer entertain any doubt of the *existence* of this principle in breast-milk, though it may vary in its quantity and consistence; nor hesitate to insist, that the result of my experiments on human-milk, and infantile green-ſtools, (which it has been said, *do ſtain* blue paper, red) completely overturns all that Dr. CLARKE has advanced, to the entire satisfaction of my own mind: but as our contradictory assertions, (as to facts) cannot satisfy those who have not made the like experiments, I have submitted the matter in a way of fair argument, and appeal to the discernment of the reader.

Since these observations on Dr. Clarke's Essay were drawn up, I have, however,

been able to adduce a testimony which I conceive will not generally be disputed, and with which many of my readers may possibly have been well acquainted before I was. Had I met with it sooner, it would, probably, have saved me a great deal of trouble; but the *Histoire et Mémoires de la Société Royale de Médicine, année* 1790, might not perhaps have fallen in my way to this day, if my good friend Dr. *Andrij* of *Paris* had not made me a present of it; though long after I had completed my experiments on human-milk. It were needless in this place to quote, in detail, the experiments there recorded; it must be sufficient to give tables of their result,* and to say that they correspond exactly with my own, referring to the volume itself for an ample account of the modes of investigation, further properties, and component parts of various milks there specified, demonstrated by numberless experiments, and upon multiplied authorities.

* See the annexed Table.

To

To sum up the whole, then, upon Dr. CLARKE's own principles, and forbearing for the present to insist either upon my own experiments, or others, it may be fairly urged, that, in disorders of the first-passages, the matters ejected both by vomiting and stools are frequently flaky, coagulated, or curdy; that they have a sensibly sour smell; and that the stools are often of a green colour, very numerous, and attended with griping pains. That these symptoms and complaints are removed by such remedies as are allowed to correct acidity in other instances, or are mitigated in a greater or less degree, as long as such medicines remain in, and are acting on the stomach and bowels, and mixing with their contents. That, moreover, every kind of aliment which during its digestion is alike peculiarly disposed to produce acidity, both in the adult and infant states, always increases the above symptoms; breast-milk, however, (from a healthy nurse) the peculiar food of infants, being less commonly

commonly found hurtful to them, because more thin and lighter on the stomach than most other food, and having less of that true curd found in most other milks. But whenever human-milk happens to disagree, the symptoms are exactly the same as in infants brought up by hand; though in other instances, a recourse to it, (or even asses-milk) frequently proves a remedy, for children whose bowels have been disordered from being previously nourished by the spoon. And though this fact may indeed, fairly prove it to be far less disposed to turn curdy and acid than cow's-milk, and farinaceous substances; yet the circumstance of sucking children being often afflicted in precisely the same manner, and relieved by the same medicines with children brought up by hand, equally demonstrates the cause of their complaints to be exactly similar; and that human-milk, when mixed with the gastric juice, is disposed to turn acid, and its component parts to separate improperly, or, perhaps, too hastily,

as

as in adults whose digestion is bad. And that on these accounts, the milk becomes curdy, occasioning indigestion and wind, which jointly irritate the nervous coat of the stomach and bowels, and produce complaints that endanger the infant's life, unless remedied by the known correctors of acidity. Nor are these effects, by any means, rare occurrences, or confined to tender and delicate infants, as Dr. Clarke would insinuate: and on this head I may venture to appeal to his own, and every practitioner's experience, as well as to the mortality in the *Dublin* Lying-in hospital.* It may be added, that a disposition to these complaints often continues as long as infants remain at the breast, or live on any other milk diet, but are diminished as soon as they take freely of animal food; and that this change does not depend merely on their more advanced age, but on the alteration of diet, is pretty evident from the like advantages

* See the note at the close of this *Introduction*.

being

being often obtained by allowing them a little broth, once or more every day, at a much earlier age.

Such then are the facts in regard to diet, the alvine discharges, and complaints of the first-passages during infancy; and such are the effects of certain medicines known to correct or abate acidity; and to what shall they be attributed, or what can be more naturally inferred from these premises, than that there certainly is an acescent tendency in the gastric juices of infants, (useful, no doubt, upon the whole,) and a quality in *every kind* of *milk* disposing it to be curdled or coagulated, and become acrid by the admixture? To these observations might be added that of infants being so very rarely attacked with fever, however severe or continued their pains, or other complaints may be; and though many good reasons might, doubtless, be given for this exemption, yet none can exclude, the well known aphorism of the father of physic, before quoted, nor be more appropriate

to

to the occasion than that maxim, "*acidum eructantes non sunt pleuritici.*"

I have no desire to enter into a formal dispute with any man, much less to contend for mere opinions irrelative to practical truth; but should any persons be determined to dispute both the inferences and facts I have advanced, let them, at least, tell us *what* it is that so uniformly acts as an acid might be expected to do, curdling or thickening the contents of the stomach, offending the bowels, producing green and sour-smelling stools, with other symptoms of indigestion recurring so uniformly in delicate infants: effects which nothing could ever be contrived totally to prevent, nor can any thing so uniformly relieve as *ant-acids* or absorbents. May it not justly be presumed to be something not easily distinguished from what we term an *acid* in atonic adults? How much less injurious, however, this disposition may be, than that tendency to putrescency prevailing in the latter, induced by a very different diet,

diet, and a more exalted bile necessary to digest it, may be fairly presumed; and upon which, it has been noticed, I have already given my own sentiments at large, even in former editions of this work. It may, however, be just remarked in this place, that it might, possibly, be fairly urged, that infants must, therefore, either be exempt from their share of the infirmities of human nature, (unless infected by their parents, with scrofula, lues, &c.) or be peculiarly liable to disorders arising from acidity in the first-passages, which are confessedly among the slightest evils, and at the same time a probable occasion of their escaping those of a more dangerous tendency.

I conclude, therefore, with observing, that indebted as the Public is, and particularly gratified as I am, by the pains and researches of Dr. CLARKE, I cannot but insist, that his inductions are neither properly made out by experiments, nor supported by the arguments he has advanced: nor is it, perhaps, perfectly certain,

tain, what essential difference there may be between every possible combination with human-milk out of the body, and its natural mixture with the gastric juice in the stomach of an infant. What changes the temperature and action of that viscus, whether mechanical, or chymical, may be capable of producing, cannot for certain, be either proved or disproved from mere speculation; so that whatever opinion we may form, must remain very problematical, any further than matter of fact may discover their operation, in the different stages of digestion, both in atonic and athlétic subjects. But in fine, whether under all, or any particular circumstances, any of the gastric juices be precisely what chemists would term an acid; or whether the offensive matters, under an imperfect digestion, be usually of the nature of curd, butter, or phlegm; or whatever theory Dr. CLARKE, or others, may from his researches be justified in advancing, at some future period, cannot weaken the force of any fair inference from facts.

The

The author of this work, indeed, ardently wishes, that a practical improvement may be made of every discovery; but whatever the improvements may be, it does not seem likely from the above impartial statements, that the treatment of *infantile* disorders recommended by him, and in many particulars very generally adopted for the last half century, will undergo any essential alteration.*

DIRECTIONS

* Dr. CLARKE concludes with expressing a hope, that a system of practice more rational than the present may be struck out.—What has been the precise mode of practice, or its success in Ireland, I can guess only from Dr. CLARKE's statement in regard to the Dublin Lying-in Hospital; where, passing by those years in which an epidemic is said to have raged amongst the children, the number of deaths has ever been far beyond the average in the British Lying-in Hospital, in London, where the old plan of treatment is pursued.

In support of this assertion I submit the following statement of the two hospitals, (and it is presumed, not an unfair one,) being copied from the printed accounts of that in Dublin, and from certain outlines drawn up, on another occasion, by Dr. CLARKE himself; and contrasted by corresponding extracts from the

the British Lying-in Hospital, subsequent to those quoted by the Doctor.*

And first, from his own statement, it appears, that in the old Lying-in Hospital in Dublin,† (reckoning from its first institution, when, probably, the furniture was new, and there existed no peculiar remote causes of disease) out of 3,746 infants, 241 died within the month; that is, between six and seven in every hundred: but that in the British Lying-in Hospital, (confessedly a very old and ill-contrived edifice) the Doctor reports, (reckoning likewise from its first institution) only 146 died, out of 3,611; which is only as four to the hundred.

After this period the endemic commenced,‡ and the fatality greatly increased; the Doctor then remarks, that after proper means were taken to remove the remote causes of that fatal disease, only 419 infants died out of 8,033 births; that is, from five to six in every hundred.

It appears from the printed accounts of the Hospital, that this period is taken from the year 1783 to 1788, inclusive. But, the like accounts of the British Lying-in Hospital, during the very same years, report that, out of 3,374 children born there, only 95 died; which is under three in each hundred.

But to render these calculations more immediately applicable to Dr. CLARKE's observations on the treat-

* For their perfect accuracy, it is not to be expected we should either of us be answerable, as much must depend upon the report of inferior officers; but on my own part, no wilful or known mis-statement is offered.

† See Transactions of the Royal Irish Academy, anno 1789.

‡ See NINE-DAYS'-DISEASE, vol. i. pages 156, 157.

ment of infants, I shall to these six years, add the Dublin printed account of the three succeeding ones, thereby increasing the above period to nine. During these years, the number of deaths was, indeed, amazingly decreased, so that the endemic, especially during the three last, seems to have entirely given way; and it being also during this period, that Dr. CLARKE had taken up his new theory both of the nature of *human-milk*, and the early diseases of infants, a comparison of the number of deaths in the two hospitals, and any inference from it, will be brought to a fair issue. It appears then, that from the year 1783 to 1791, 12,688 children were born in the Dublin Lying-in Hospital, out of which 593 died; which is as, 4⅔ in an hundred. But, in the British Lying-in Hospital, during the same years, 5,233 children being born, only 112 died; which is but little more than two in each hundred. In the last of the above years (as well as during many former ones) only two children died in the British Lying-in Hospital, out of 627 born there; and in the year before that, no more than five, out of 630, which number also was not exceeded in several preceding years*, and seems to prove almost to demonstration, that the entire management

* So that the number of infants dying in the British Lying-in hospital under three weeks old, is usually far less than that of STILL-BORN children, as Dr. CLARKE seems to notice with some surprize, in regard to one of the London hospitals he has occasion to mention; but as it, indeed, ought to be every where, at that early period.—If small things may be compared with great, it may be added here, that speaking from memory, I have reason to think, that in my private practice, during the last

management of infants in that hospital, as well as the practice of the present day, must be rational and judicious; and is far from calling for a total subversion of the principles by which they have been always regulated.

last five years, I have not lost more than three infants under a month old; which is much below the average of still-born children, that has fallen to my lot, and of which I have an exact register.

In allusion to this remark, as well as to add my mite to assist the inquiries of other calculators, I annex the following statements taken from the registers of the hospital.

Infants *Still-born*.

During the first ten years, one in 32.
the second ten years, one in 37.
the third - - one in 26.
the fourth - one in 19.

It hence appears, that the average of still-born children has been, as 1 to 25.

THE *Average* of *Deaths*,

During forty years, has been, one in 34.
the last eight years,* one in 84.

THE *Average* of *Twins*,

During forty-eight years, one in 86.
Boys to Girls, as 17 to 16.

* It appears from the hospital register, that during the last five and twenty years, the average of deaths has been considerably lessened, and also that a smaller proportion of infants has died in the last eight than at any period since the first institution of the Charity; and it may, perhaps, be fairly conjectured, through improvements made in the management of infants, which was not formerly so fully consigned to Physicians.

I add, that in the British Lying-in Hospital, from the year 1757, (being that in which the hospital in Dublin was instituted,) to the year 1791, the average of children's deaths has been under three in the hundred; but that in the Hospital in Dublin, during the seven most successful years it ever experienced, (either previous, or subsequent to the endemic, the average is above four; though the mothers, usually, remain there only a fortnight, but those in the British Lying-in Hospital, three weeks, and sometimes a month.

I have been at the pains of stating this average, in the two hospitals, at different periods, that the reader might be competent to judge, *cæteris paribus*, of the probable better practice; and may see for himself, that, if the management of new-born infants, or the treatment of their disorders, has been of late anywise influenced in Dublin, by Dr. CLARKE's new theory, it has not, hitherto, to say the least of it, any great claim to the practitioner's attention, on the score of its success.

DIRECTIONS

FOR THE

MANAGEMENT OF INFANTS FROM THE BIRTH.

AMONGST the multifarious matter brought forward in the following pages, the Aliment most adapted to Infancy has been said to be one of the first importance. Previously, therefore, to treating of Diet more extensively, and the General Management of Children, I shall enter into a candid discussion of that particular, by considering the case of Infants intended to be reared without the breast, or brought up as it is termed by *hand*.

But it would carry me altogether beyond the limits I have assigned, were I to

enter so far into the investigation of the subject, as to set forth all the improprieties of that mode of training up infants from the birth. And I am glad to find by some very recent examples among persons of rank, that there is less occasion for it, than there appeared to be some years ago: and, indeed, the mistake has generally originated with parents, rather than with medical men. It would be unpardonable, however, in a work of this sort, not to insist how inadequate every substitute for the breast has been universally found; and therefore how proper it is, that every child should have it, and even be suckled by its own mother, where her health can safely admit of it.—Reason, instinct, experience, all conspire to support this opinion; and whoever will determine to attend only to matters of fact, may soon be convinced of it. Nature herself points it out: all the nobler part of the irrational creation is qualified for it, and by instinct it obeys—the human race alone, possessed of nobler powers,

and

and rational discernment, perverts those faculties to evade its dictates, and to invent excuses for refusing its claims. But puerile, indeed, are all the common arguments against it, in the greater number of instances; and herein Dr. ARMSTRONG seems to have egregiously erred, for though, apparently, an advocate for suckling, he has laboured for arguments to apologize for the spoon and the boat, in too many instances. It were easy, perhaps, to produce as sound arguments againſt eating more than once a day, because so many people become diseased from exceſs. On the other hand, a new and very rational argument in favour of breast-milk, is advanced by Mr. Moss, who observes, that the gastric juices of every animal may be supposed to be the best suited to act upon its respective milk.*

But

* The duty of suckling has the sanction of the most ancient writers, and is distinctly noticed by PLINY. VAN SWIETEN remarks, that one of the queens of

But not only is the breast-milk the only natural,* and most proper food for infants, (experience demonstrating, no artificial one to be equally easy of digestion, and nutricious,) but suckling conduces likewise to the easy recovery of the mother; though she should not be able wholly to support her child by the breast, nor to continue suckling as long as the infant may require it. But though from

France suckled her own son, and continued it even during a fever. One of her ladies having, on some occasion, given the child her breast, the queen was so much disgusted at it, that she forced her finger into her son's mouth to excite vomiting; unwilling that it should receive any nourishment but from herself.

* In some very northern parts of the world, as those of *Greenland*, and the neighbouring country of the *Esquimaux*, the breast appears to be, in the strictest propriety of speech, the *only* food that nature has provided for infants; insomuch that, whenever a suckling mother happens to die, her infant is buried with her: experience, (one would hope) having demonstrated the inefficacy of the hard and coarse diet which nature has there so sparingly dealt out, it is esteemed an act of compassion to put an end to an infant's sufferings by plunging it into the sea.

much

much experience I venture to give this opinion, I do, by no means, intend to assert, that every mother is able to suckle her child, even for the month, or would do well to attempt it; but I am, nevertheless, equally satisfied, that many are very well able who do not, and that several who have only through fear been discouraged from doing it, in two or three lyings-in, having afterwards been prevailed on to make the attempt, have gone on with it for several months, enjoyed better health when they suckled than at any other part of their lives, and their children have thriven perfectly well. Art and management will likewise afford some assistance, where the natural constitution, alone, may not be fully equal to the task. In this view, besides a suitable diet, air, exercise and a regular manner of living; I will venture to recommend cold-bathing, especially in the sea, if the season of the year should permit; and this not only from my own experience but that of the writer just quoted, who asserts, that

it

it is often found particularly useful in restoring the strength, and increasing the milk in nurses of a weak constitution; adding, that it never can do any harm to a woman merely as a nurse, where no other reason independant of that situation, forbids it. The principal caution necessary, being, not to bathe too frequently; more than twice, or at most three times a week being often injurious to delicate habits.

Thus, besides the advantages derived to infants, it appears there are others resulting to the suckling mother, and some deserving a further notice. For by this means, where due care is taken, painful inflammations and suppurations in the breast may often be prevented, as may be fairly concluded, not only from the rarity of such complaints in the *British Lying-in Hospital*, where almost every woman suckles her infant, but from the like authority of Dr. NELSON, who reports, that "out of 4,400 women who suckled their children, only four had milk-sores, and that

that these had either no nipples or former sore breasts." It has likewise long been suspected, and of late years more generally imagined, that some of the worst fevers, and more rare ill effects of child-bearing may, generally, be prevented, by suffering the milk to flow duly to the breasts, and be freely drawn from them, though only for the month. These advantages, one should hope, might tend to induce ladies of rank to set a general example, by performing this kindest and most pleasant office, at least during the month. But it would be unjust not to add, that whenever they may purpose to assume it for a much longer time, they should determine to do it effectually, or they will but injure their children, as well as forfeit many of the advantages and comforts, which in a due execution of it, they would have a right to expect.

For a long time, however, writers have successively complained, that, notwithstanding the many encouragements often brought to the ears, and urged upon parents,

parents, that tyrant Fashion has prevailed over the good sense and natural feelings of many, whose maternal affection can be, in no other instance, suspected. It is with great pleasure, nevertheless, that I have been able to observe, both in the last and present editions of this work, that ladies of rank are every year becoming converts to this maternal duty, and are proud of supplying their offspring with that new nourishment, wherewith nature hath purposely endowed them.

Another important, and affecting consideration might be brought forward on this head, which I shall, indeed, only touch upon, as it calls rather for the pen of the moral philosopher than of a physician, I mean, the sacrifice which poor women make in going out to suckle other people's children; the sad consequences of which are often severely felt by their own, through neglect or mismanagement, and especially for want of the breast. Indeed, no attention of the nurse can duly compensate this loss; and only the most common

common substitutes for it can, in their forlorn circumstances, be allowed them. This becomes a source of evil, that, I fear, is not usually thought of, and proves eventually the sacrifice of many infants every year; a matter of serious importance, indeed, to the public, as well as to the families immediately concerned.*

It gives me real concern to find occasion for the least unpleasant reflections upon any part of the sex I so much honour, and upon any of my fair and sensi-

* It is with peculiar satisfaction, that I congratulate the benevolent in the prospect of the evils hitherto attendant, being shortly obviated to a greater degree than could have been expected, by the admirable institution devised by Drs. DENMAN and CROFT; and that it has met with all the support that could be wished for, from families of wealth and rank. A proper house in a healthy and convenient situation, for the reception of the infant-children of poor women engaged abroad as wet-nurses, which for sometime retarded the execution of this benevolent design, being now removed, our most gracious QUEEN has condescended to stand forward as its august *Patroness*, and their ROYAL HIGHNESSES the PRINCESS of WALES, and DUCHESS of YORK, as the *Vice-Patronesses*.

ble

ble countrywomen, in particular. Nevertheless, I cannot help suspecting, that wherever any neglect of parental duties may exist, whether in regard to suckling, or superintending the management of their children,* that does not arise from want of health, or some equally warrantable excuse, it can be charged only on the depravity of the age, which insensibly corrupts the taste and perverts the judgment of many who wish to do well. And depravity of manners, when once become general, has ever been considered as the leading symptom of a falling empire, and

* This seems to be the case at present amongst the lower class of people in *France*: and that nation is therefore very much indebted to the goodness of the late Monarch, who to the last, was making solicitous inquiries through *Europe* to discover the best substitute for the breast.† Should the method recommended in the subsequent pages be, amongst others, adopted, its claim will soon be determined; and I venture to hope, will yet be to the advantage of the rising generation in that kingdom, and elsewhere.

† See Questions proposed to the Royal Society of Medicine in Paris, October 1789, by the late KING's authority,

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ought to be pointed out as far as it extends, by every friend to the community, at whatever hazard of giving offence, in every conspicuous instance of it. TACITUS complains of the degeneracy of *Rome* in his days, (though by no means its most degenerate era,) lamenting that, while in former times grave matrons attended to their children, as their first family concern, they now, says he, intrust them to the care of some *Grecian* girl, or other inferior domestic.—It is no small satisfaction to me, however, to observe, that in this country there has been no ground for much complaint on this head, and that the evil is annually diminishing; there are also examples of the first magnitude of a nobler conduct, and one, at the head of all, which were it copied without exception, in domestic life, would prove the glory of the present day, and a blessing to the rising generation.—May the time hasten when it shall be universally followed by her inferiours, whilst I attempt to point out as far as my observation has extended

extended, the most prudent means of executing this important branch of female duty.

It may not be amiss, at the opening of the ensuing observations to remark, that the demand for the multifarious directions here offered, as well as all those given by other writers on the management of children, arises from the false reasoning of those to whose care the infant state is frequently intrusted; who instead of being guided by the sober dictates of nature, have adopted the rules of art, falsely so called, or have followed the wild fancies of anile superstition.

On the other hand, the various tribes of the irrational species act in a thousand instances more prudently than we do, and being uniformly guided by instinct, are led implicity, and safely through all their operations. Many quadrupeds, fish, and even reptiles seem to know what is proper for them as soon as they come into existence, and have strength sufficient to reach after it. In other instances, they

are

are guided by the parent, who seems to adjoin some degree of knowledge acquired by experience, to the instinct with which it is naturally endowed. Man on the contrary, designed to be the pupil of observation, has scarce any innate discernment; and consequently his infant race pass through a long period utterly helpless, alike divested of ideas to guide, and of strength to manage for themselves. But to the parent is imparted both; whose province it is to judge for them, and actually to put into their hands or mouths, whatsoever they may stand in need of. When the parent, therefore, forsakes the paths of simplicity, and lays down arbitrary rules, the result of false science, instead of patient experience; or mistakes the clamour of fashion for the voice of nature, confusion and disease must be the unavoidable consequence.—Awakened by these, man is loudly called upon to return to the simplicity of nature, and the result of dispassionate observation. It is this will be our aim in the work before

us, wherever danger and deviation are connected; assured, that the experience of the most judicious and successful practitioners will applaud the design, and confirm the generality of our observations.

To this end let us imagine an infant just born, who, doubtless, at this moment, calls for our best attentions. And first, it may be observed, that it ought not to be exposed to any thing that may violently, or too suddenly affect the senses: on which account, MOSCHION and ALBINUS have well advised; that it should not be exposed either to great heat or cold, nor to a strong light, or odours of any kind, however grateful to adults; the unpleasant effects of which are sufficiently manifested by the infant itself.

The attention will next be called to washing and dressing it, together with other little offices suited to the occasion. And this first washing is of more importance than is usually imagined, being amongst the *little* things which are often overlooked by writers and others, (and by some

some thought of no consequence;*) but it is not every little thing that may safely be neglected, or carelessly done. In regard to poor people, especially, and infants born in hospitals, and other crouded apartments, the importance of proper washing is greatly increased, the foulness left upon the ſkin being a remote cause of some dangerous endemic complaints.†) Some infants also are covered much more than others with a thick, viscid matter, which cleaves so fast to the skin, that it is not easily washed off; which there is, however, another reason for doing, as it would obstruct perspiration, which can never be duly performed, where the skin is left anywise foul. On this account, nurses should be directed to be very attentive to this first concern of their infant charge, and whatever wash they may make use of, it should always have soap in it,

* Dr. *Hamilton.*

† See *Mons. Baumes,* on the *Jaundice* and *Mesenteric fever.*

and the child be well rubbed, especially under the arms, in the hams, and groins, where this mucus is apt to adhere: and to this end, it would be better that no pomatum should be made use of, or other grease, which tends to stop up the pores, and prevent perspiration; or that nurses be, at least very careful the grease be afterwards well wiped off. In the same view, it were well if it were a common practice to repeat the washing for two or three days, with light friction of the ſkin; which it is not improbable might tend to prevent the red-gum and other similar affections of the skin, with such other complaints as may arise from the suppression of insensible perspiration.

After a little time, and sometimes on the next day, most nurses wash a child all over with cold water; a practice highly extolled by Dr. ARMSTRONG, as well as many other practitioners. But though no one can be a greater advocate for every thing that is bracing than I am, I cannot approve of this substitute for cold-bathing,

ing, as it is called; at least, as an indiscriminate practice. The cold-bath acts on a quite different principle, and is so very beneficial, that I could wish almost every child, especially those born in *London*, were bathed three or four months old, (provided they be not costive, nor feverish at the time, have no internal obstructions, nor the season of the year be improper;) which I am certain would remove, or perhaps prevent, many of their complaints.* But to see a little infant of a few

* *Monsr. Le Febure de Villebrune* in his translation of this work into *French*, has added a chapter upon *baths*; in which he highly extols the warm-bath, and as strongly controverts the idea of the probable good effects of cold-bathing, and even makes use of a long chain of arguments against it, deduced, indeed, from an ingenious theory, and supported by quotations from the ancients; who practised, however, in a very different climate.—The shortest, and perhaps, the best reply to this specious reasoning, might be given in the well-known mode of DIOGENES to ZENO, whose arguments against the possibility of Motion, DIOGENES laconically refuted, by hastily getting up, and walking across the school. We have, in like manner, only to

few days old, the off-spring perhaps of a delicate mother who has not even strength to

point to the numbers of children and young people, who from very weakly infants, have been rendered strong and healthy, merely from a prudent use of the *cold-bath*; and may defy any man to produce the like instances of its opposite effects when made use of with the cautions which every powerful remedy requires. The *Spartan* women, likewise, afford us sufficient evidence of the salutary effects of cold-bathing, notwithstanding the comments made upon the women themselves, by *Aristotle*, as quoted by our author.

And, indeed, from the surprising good effects that sometimes follow the use of Cold-baths, I do not wonder that Priests, in times of ignorance, have been known to account them holy, and dedicate them to some Saint; to whose influence certain Cures were attributed.

The salutary operations of the cold-bath are, however, easily accounted for, from its promoting insensible perspiration, and rendering that excretion less readily affected by the impression of the external air.

It may be known to agree with children, when they come out of it warm, lively, and their strength increases on the use of it. On the other hand, if they continue cold, are dispirited, and seem rather to lose strength, it may be as often prejudicial.

As a mean of acquiring that re-action and glow, which bathing is designed to affect, some people have very

to suckle it, washed up to the loins and breast in cold water, exposed for several minutes,

very rationally recommended throwing a loose flannel chemise over the child the instant it is taken out of the bath. This will not only secure from the unpleasant shock arising from the cold air, but allow time for friction, along the course of the spine, which should be continued all the while that an assistant is employed in wiping the lower extremities, and putting on their usual covering. If this were duly attended to, I am persuaded, that both many infants and adult persons would be benefited by cold-bathing, who for want of that kindly glow, are unable to bear even bathing in the sea.

But I must observe, that the abovementioned unpleasant effects are frequently owing to an improper use of bathing, and for want of making a very obvious discrimination in the habit of body of different children.—For the tender and delicate, not only should a good quantity of salt be put into the bath, but the water should also at first be a little warmed, and children be brought only by degrees to endure it quite cold, which they will not by this means be the less likely to do: or should the water never be perfectly so, (but merely below the heat of the skin) the advantages of such bathing will, nevertheless, be considerable;* though the late Dr. HUNTER and others have

* Hippocrates speaking of bathing, cautions against the two extremes of heat and cold. DE LIQUID. USU.

minutes, perhaps in the midst of winter, (when children are more liable to disease than those born in summer;) itself in one

thought differently. It is not merely from the coldness of the water that the benefit arises, but is rather from the subject being suddenly immersed into a very different medium, if so be, that medium be not actually warm) in which the contact of the external air is taken off during the immersion, and is as suddenly restored on his being taken out. By this means, the blood is alternately pushed forward into the extreme vessels, and suddenly repelled to the heart, (in proportion to the coldness of the water and the powers of the system) and suffers an advantageous attrition against the sides of the vessels. The small passages are rendered pervious, and the contactile power of the heart is increased, as well as the muscular fibres, proportionally strengthened.—The salt added to the water pretty certainly prevents taking cold, whilst it adds to the stimulus on the skin, and has therefore a more salutary operation on the pores.

The infant having been put quite under water, should be taken out as soon as it is possible. It should be received in a blanket, and wiped dry with a cloth in the most expeditious manner; and as soon as it can be dressed, should partake of such exercise as may be best suited to his age. There will need no great attention to its being made perfectly dry, as a child will be less liable to take cold from a few drops of salt-water being left upon it, than by being long uncovered in some parts of its body, in an over-caution to wiping it dry.

continued

continued scream, and the fond mother covering her ears under the bed-clothes that she may not be distressed by its cries; has ever struck me as a piece of unnecessary severity, and savours as little of kindness, as plunging an infant a second or third time, into a tub of water, with its mouth open, and gasping for breath, in the old-fashioned mode of cold bathing: both of which often induce cramps and pains in the bowels, and weakness of the lower extremities, but rarely an increase of the strength. It surely cannot be amiss, in winter time at least, to take the cold off the water for the few first days, which it has been observed, will be useful in other respects; and whenever cold water is made use of, it will be quite sufficient to wash the child as far as a regard to cleanliness may require, which will always be the parts exposed to the worst kinds of galling and excoriation: on which account cold water is certainly useful. With this view, beside the nates and groins, the arm-pits, folds of the neck, and parts behind

behind the ears, being also disposed to slight chaffings, may be occasionally washed in like manner, and if the discharge be not checked by it, they should be dusted with a little hair powder, the powder of lapis calaminaris, or of ceruse, or a little white vitriol may be added to the water; which if the excoriations are not very considerable, will generally heal them very soon: should these fail, they may be dressed with the red drying ointment of *Bate's* dispensatory, which is an excellent remedy in a thousand instances, and has very undeservedly fallen into disuse. But these drying remedies should rarely be applied to the ears. In a very acid state of the stomach, during the month, particularly where there is a purging with very green stools, the parts covered by the cloths are moreover infested with a still more troublesome excoriation, called Intertrigo, and whilst that state continues, will not be healed by any drying applications. I have found nothing so pleasant, and useful in this case, as

covering

covering the parts with the thin skin found upon the veal kidney, which softens, and cools them, till the cause of the complaint may be removed by the use of proper absorbents. There is a mixed affection of this kind, however, in which these parts are not actually excoriated, but are very hard and swollen, as well as painful and inflamed; and the affection seems to be kept up by the acrid nature of the excretions, though not originally caused by it. In this case, instead of daubing the parts with wetted fuller's earth, gruel, or greasy mixtures; an embrocation of elder-flower-water, with as much boiling milk as will render it moderately warm, has been immediately efficacious. But one grand mean of keeping children from chafing is to preserve them very dry and clean;* articles of so much importance,

* An error worthy of remark in this place, is, that of wearing a pilch (as it is called;) an old fashion still too much in use, and contributes not a little to make children weak: it being originally designed to be worn only

portance, that I should have insisted much longer upon them, if I had not already far exceeded the bounds I had intended. It may be necessary, however, to drop a word more, with a view to counteract a vulgar notion, familiar only to common people, that a frequent change of linen has a tendency to weaken new-born children; an absurd idea that has not the smallest foundation in reason or fact. It is, on the other hand, next to impossible, that a child should thrive or be healthy, if the strictest attention be not paid to cleanliness, which is one of the principal articles in which the children of poor people are at a great disadvantage, and

only for the few first weeks after birth, but is often continued for as many months. It can answer no possible end but that of saving a little trouble, since instead of keeping children dry and clean, it has the directly contrary effect; for if it has received any wet through the usual cloth laid under it, it ought itself to be changed as often as the other, or must certainly be damp and uncleanly; whilst by heating the loins, and lower limbs, it has a manifest tendency to relax, and dispose infants to become rickety.

which

which becomes a constant source of rickets and distortions among them. But, indeed, little infants, if healthy, may oftentimes be so managed as to be much more cleanly, than even people of great delicacy have been wont to imagine; so as even to supersede altogether the use of cloths, either by night or day.*

Another useless operation practised by nurses, is, that of forcing out the milk from the little breasts of new-born infants. Some children a day or two after they are born, have the breasts exceedingly tumid, hard, and painful, containing something like milk; and nurses imagine it to be a great kindness to milk

* I have, indeed, known only three or four instances of it, (though there may be many that I have not been made acquainted with;) one of which was in the family of a Lady of rank, whom I was some years ago attending. I was there myself a witness to the good effect of holding a little pan under an infant of only four months old, as it lay across the nurse's lap; which I was assured had been her practice from the month, and that the Lady had obliged her nursery-maids to do the like with her two former children.

it

it out, as it is called. But I have often been grieved, to see a nurse rudely rubbing, and even squeezing the breasts already in a state of inflammation, and continuing it even for some minutes, though the child's cries might convince her she is putting it to pain. In the case of inflammation, a bit of bread and milk poultice is the properest application, but if the part be not inflamed, it can want nothing at all; though if it be thought something ought to be done, a little oil with a drop or two of brandy may be gently rubbed in, or small pieces of the litharge-plaster may be applied, and lie on the parts till they fall off of themselves. I have, indeed, had sufficient evidence of such considerable tumefaction and hardness, as to satisfy me, that when no violence is offered to the parts, the application of a bread and milk poultice will always prevent either suppuration, or other unpleasant consequence. I have met with instances in which the tumour has been much larger and harder than

than I could have suspected on such an occasion, and yet after continuing for more than a week without any sensible diminution or amendment, has soon afterwards subsided entirely.

Having considered these necessary preparations, I proceed to offer a few remarks on the prevailing errors in *Dress*.

Upon the first sight of a new-born infant, every one is struck with the idea of its weakness and helplessness; and we often take very improper methods of strengthening it. It is *designed* to be weak and tender in this infant-state, as is every other object around us.* Take a survey of nature, from the first opening leaves of the vernal flower, or the more delicate foliage of the sensitive plant, to the young lion, or the elephant; they are all in

* Nous naissons foibles, nous avons besoin de forces; nous naissons dépourvous de tout, nous avons besoin d'assistance; nous naissons stupides, nous avons besoin de jugement; tout ce que nous n'avons pas à notre naissance, et dont nous avons besoin etant grands, nous est donnè par l'education. ROUSSEAU.

their

their several orders, proportionally weak, and cannot exist without some exterior support. But they stand in need of nothing but what nature has prepared for them. If seed be cast into a proper soil, it wants only the surrounding elements to ensure vigour and maturity. So, if the tender infant be born of healthy parents, and at its full time, it is usually sufficiently strong; proper food and nursing are the elements whose fostering influence it requires—if it have these, it will need nothing more.

It is true, it is very weak; but is it therefore to be tight rolled, under the idea of supporting it, and giving it strength? It is a bundle of tender vessels, through which a fluid is to pass, undisturbed, to be equally distributed through the body, and which are therefore surrounded by a soft medium, capable of yielding to the impetus of their contents. Hence we cannot but conceive, how injurious any great pressure must be to so delicate a frame, which before

before birth swam in a soft fluid. But besides this, the infant requires freedom and liberty on other accounts. The state of infancy and childhood (as Dr. GREGORY observes) is impatient of restraint in this respect, through "the restless activity incident to youth, which makes it delight to be in perpetual motion, and to see every thing in motion around it."

Let us again advert to the irrational species, whose more sagacious conduct so often disgraces our own. There is no occasion on which they do not seem to consult propriety; and having a right end in view, they as certainly accomplish it, and always in proper time.—Doth a little bird design to prepare a lodging for her young? it is sure to make choice of the fittest situation, whether to defend them from dangers, or obtain the most convenient supply of their wants; if to this end it be necessary to construct the nest of rough and strong clay, it is

still lined with down: the young lie warm and secure, but they lie at their ease.

I am not ignorant, indeed, that for many years past, the very ancient tight mode of dressing infants has been discontinued, and for which we were probably first indebted to Dr. CADOGAN. It is certain also, that for the last thirty years, the fashion recommended by him has been improving; but there is yet room to go forward, and were every tender parent in this country thoroughly sensible of its advantages, it would soon become fashionable to see children as much at their ease on a christening-day, as they are when laid at night in their beds. And I may be permitted to add here, what every modern practitioner has adverted to, that were strings, almost in every instance, substituted for pins, physicians would seldom be at a loss to account for the sudden cries, and complaints of infants, which are too often produced by this needless

part

part of their dress.*—A practice, it is to be hoped, which may in time be laid aside, since some of the first families in the kingdom have already set the example.

Nature knows no other use of clothing but to defend from the cold—all that is necessary therefore for this purpose, is to wrap the child up in a soft loose covering, and not too great a weight of it; to which ornaments enough might be added without doing mischief. And had this matter been always left to the most ordinary discretion of parents, this is, probably, all that would have been done; but the business of dressing an infant is become a secret, which none but adepts

* A gentlewoman many years ago informed me, that one of her children, after long and incessant crying, fell into strong convulsions, which her physician was at a loss to account for, nor was the cause discovered till after death; when on the cap being taken off, (which had not been changed on account of its illness,) a small pin was discovered, sticking up to the head, in the large fontanelle.

must pretend to understand. The child, itself, however, discovers to us the propriety of such clothing, by the happiness and delight it expresses every time it is undressed, and rubbed with a soft hand. Whereas, *the art of dressing* has laid the foundation of many a bad shape, and what is worse, of very bad health, through the greater part of life. Instead, therefore, of a scrupulous and hurtful attention to such formalities, nurses would be much better employed in carefully examining new-born infants in order to discover any malformation of parts, especially those concerned in the excretions necessary to life, which, it has been said, is sometimes over-looked.

The tender infant being dressed, and having undergone such other little discipline as has been mentioned, is usually so far fatigued by it, as soon afterwards to fall into a sound sleep. We shall consider it as in this state, and leave it a while to be refreshed, whilst I endeavour to conduct my reader through the various other

other duties which the infant calls for from day to day, till it happily arrives at an age free from the peculiar dangers of infancy.

In the pursuit of such a plan, we meet with a variety of miscellaneous articles, and though many of them are not of apparent magnitude in themselves, are in their consequences highly worthy of notice; which that they may be thrown into some kind of order, may all be very well classed under the several heads of the *Non-naturals*, as they are called. Such are Air; Meat and Drink; Sleep and Watching; Motion and Rest; Retention and Secretion; and the Passions of the Mind: a due attention to which, may prevent many of the evils incident to this tender age.—The first of these was said to be AIR.

The great importance of this has been set forth when speaking of the *Diseases* of infants: I shall here in a more particular way observe, that the age, constitution, and circumstances of the child, and the

season of the year, ought always to be taken into consideration; *that* being highly proper on one occasion, which would be very detrimental at another. In general it may be said, that warmth is friendly to very young infants; but they should, nevertheless, be inured gradually to endure the cold air, which is absolutely essential to their health. I cannot therefore agree, with Dr. ARMSTRONG, who thinks the rich lose fewer children than the poor, because they are kept warmer. On the other hand, it was aptly said by one, that "a warm nursery fills a cold church-"yard." In fact, it is not a mere cold, but a damp and confined air, that is so injurious to children, and to which the poor are peculiarly exposed, especially during sleep. Much caution, indeed, is necessary on this head in this unsettled climate, and evinces the necessity of parents superintending those to whose care they intrust infant-children, since nursery-maids are often indiscreet in keeping them too long in the air at a time; which is a frequent

frequent occasion of their taking cold, and deters many parents from sending them abroad so often as they should. Another, and a worse, as well as common fault of nurses and servants, is, that of standing still with children in their arms in a current of air, or even sitting down with other servants, and suffering children who can run about, to play at a little distance by themselves, sit down on the grass, and such like; the consequences of which are often a long confinement to a warm room, and either a prohibition against going out so much as they ought, or a fresh cold owing to some of the like irregularities.

But if children be properly clothed and attended to, they will not only endure a great deal of very cold, but of other inclement weather; though it has been observed, that caution and prudence are required in training up infants to withstand, and profit from being abroad when the air is very cold or moist. Notwithstanding, it certainly may be accomplished;

and it is a known fact, both amongst the higher as well as inferior ranks of people, that those children are the healthiest and suffer the least from colds, who are accuſtomed to be abroad in almost all kinds of weather. But to render children thus strong and healthy, it is not ſufficient that they be abroad daily in a coach; they ſhould be carried on the arm, and be put on their feet, at a proper age, and partake of such exercise, for a reasonable time, as shall keep them moderately warm, and bring them home in a glow, instead of wishing to rush towards a fire the moment they return; such sudden transitions being always improper, and only render children more liable to take cold.

KRUGER has some such pertinent remarks on this head as it will scarce be thought a digression to transcribe. "The "important step" (says he,) "a man "takes into this world imparts to him "all the privileges thereof, of which this "is one, the ability to bear the effects of "the

" the air. Why then debar him from
" this privilege? as he is all his life to
" be encompassed with this air, at one
" time cold, at another warm, now moist,
" again dry. For the cold of the air so
" anxiously avoided, brings along with it
" the means that secure against its own
" inclemency; the great strength of fi-
" bres, imparted by it to the child, pro-
" cures, by means of a brisker circulation,
" a greater degree of heat, and conse-
" quently the reverse of its violent im-
" pression. This, indeed, may seem un-
" intelligible to those who imagine the
" human body to be only an hydraulic
" machine, consisting of innumerable
" tubes, in which the wheel is mov-
" ed without a proper power, conse-
" quently without a sufficient reason;
" not to those who can distinguish be-
" tween the effects of nature and art, who
" are apprised of the power that moves
" the animal body, and that the sensa-
" tions are such a power, which arise with-
" out our knowledge and our will. To

" such

" such only it will be intelligible, in " what manner an increased resistance, " produced by the cold in the solids and " fluids, is capable of bracing the heart, " the source of life. From a slight know- " ledge of mechanics we come to un- " derstand that the resistance diminishes " that power, which in animal bodies it " increases; come to see, that the most " ingenious constructions produce no " manner of motion; that all mechani- " cal laws are, indeed, perfectly just, but " more accurately to be determined, in " order to a proper application of them " to the human body, in which the will, " imagination, and sensations, are the " springs of motion, without which all " motion will cease, and only leave a " machine resembling a water-work, to " be carried about by wind.—We need " only appeal to experience, which will " teach us, that in order to a healthful " state, we need not be brought up like " those who are indulged with a bed of " down, and a warm room, but those, of

" whom

" whom no extraordinary care being " taken, are greatly left to their own " disposal."

It is indeed, generally owing to sudden transitions only that some infants so readily take cold. This sometimes happens as soon as they are born, and repeatedly during the month; the slightest symptom of which is that called the *Snuffles*, or stoppage of the nose. This is, indeed, a trifling complaint, but as such, may be just noticed in this place. It usually requires nothing more than a little pomade divine, or other unctuous aromatic to be put to the nostrils when the child is laid in the cradle; or if this fail, a little white vitriol may be dissolved in rose-water, and the ossa nasi often wetted with it.

It will be adviseable, in order to inure infants to the air, that they be short-coated as early as the season of the year will permit; but their dress should be still loose and easy, and they may continue without stockings even for two or three years,

and

and boys till they are breeched. As to this change, I think, it would with more propriety be made in the beginning of winter, than in summer, as the dress upon the whole is warmer, especially about the chest, which from having been open for three or four years, it seems, rather strange to cover, all at once, at the beginning of hot weather.*

But though I have said children would be as well without stockings, for a considerable time, I must remark, that circumstances are always to be taken into consideration. *Mutatis mutandis* should not only be the motto of physicians, but of common life, and we should be guided by it in regard to all general rules. For want of this caution in the present instance, tender children suffer exceedingly in severe winters, and are distressed with

* The propriety of this remark was more striking at the time the former editions of this work appeared, when the dress of young children was different from what it is at present, and to which it may possibly revert.

chilblains

chilblains merely for want of proper covering to their tender limbs. I have seen a child of four years old, the daughter of people of fashion, whose legs were covered with these sores quite up to the knee, and yet her mother could not be prevailed upon in time, to suffer stockings to be put on, because strong and healthy children are thought to be better without them.

The second Article under the head of Non-naturals refers to MEAT and DRINK, and is worthy of ample discussion; having as yet been considered only in relation to the expediency of breast-milk, where that may any wise be procured.

In the first place it may be remarked, that although an infant be suckled by its own mother, it certainly can stand in no real need of any food, till the time nature will bring milk into her breaſt, supposing the child be laid to it in proper time; which, doubtless, ought to be as soon as she may, by sleep or otherwise, be sufficiently refreshed to undergo the little

little fatigue that an attempt to suckle may occasion. This method, however unusual with some, is the most agreeable to nature, and to observations on the irrational species; who in many things are the very best guides we can follow.* And herein, I am constrained to differ from a late writer † whom I have more than once quoted with approbation; for by means of putting the child early to the breast, especially the first time of suckling, the nipple will be formed, and the milk be gradually brought on. Hence much pain, and its consequences, will be prevented, as well as the frequency of sore nipples,‡ which in a first lying-in, have

* This subject is largely and elegantly treated by Dr. GREGORY, in his *Comparative View*, before quoted.

† Mr. Moss.

‡ It may be proper to notice in this place, the colour sometimes given to an infant's stools, from a little blood it has repeatedly swallowed, when the nipples of the suckling mother have been very sore; a circumstance, indeed, that does not often occur, but has been alarming

have been wont to occasion no inconsiderable trouble. But should this, or even an abscess take place, they are both far less distressing under proper management than has been usually imagined,* However, should the mother be unable to suckle, and a wet nurse be engaged, there can be no harm in putting the child to

alarming for want of the true cause being understood. The stools in this case will be of a strange blackish colour, such as have been noticed under the head of fever, and very similar to the first stools of new-born infants.

* See a Treatise upon Ulcers before mentioned, in which the *milk-abscess*, and *sore nipples* are fully considered, and a successful, and easy method of treatment pointed out.

From motives of benevolence, I beg leave to mention here a new contrivance, which has succeeded so far beyond every former device, for defending the nipples, and enabling women to nourish their own children, that I cannot but wish to extend its advantages, by this public recommendation of the *Nipple-Shield*. It may be had of the ingenious contriver, Mrs. RELF, No. 12, *Bell's-Buildings, Salisbury-Square, Fleet-Street*; or for families at a distance from *London*, by application to Mr. SAVIGNY, Surgeons' Instrument-maker, in *King-Street, Covent-Garden*.

the

the breast, after it has taken a dose or two of the opening medicine; or should it be brought up by hand, and not easily kept quiet, a spoonful or two of water-gruel, sweetened with a little Lisbon-sugar or honey; may be given for this purpose, which will usually set it asleep; after which it will be ready for whatever culinary food shall be thought proper for it.

And on this article, a vaſt croud of abſurdities open upon us at once; and many of them with the ſanction of cuſtom and authority. I ſhall firſt advert to the thickneſs of the food: and it has, indeed, been matter of wonder, how the cuſtom of ſtuffing new-born infants with bread could become ſo univerſal, or the idea firſt enter the mind of a parent, that ſuch heavy food could be fit for its nouriſhment. It would be well, that all who are intruſted with the management of children ſhould have more juſt ideas of the manner in which we are nouriſhed; and eſpecially, that it is not from the great quantity

nor

nor from the quality of the food, abstractedly considered. They may surely be led to conceive, that our nourishment arises from the use the stomach makes of the food it receives, which is to pass through such a change in digestion as renders it balsamic, and fit to renew the mass of blood, which is daily wasted and consumed. An improper kind, or too great a quantity taken at a time, or too hastily, before the stomach has duly disposed of its former contents, prevents this work of digestion, and by making bad juices, weakens instead of strengthens the habit; and in the end produces Worms, Convulsions, Rickets, Scrofula, Slow Fevers, Purging and a fatal Marasmus.

Nature, it should be considered, has provided only milk, for every animal adapted to draw it from the breast; and that of women is certainly amongst the thinnest of them, but at the same time, far more nutritive than bread, and, probably, than any other milk, as it contains a greater proportion of saccharine

 matter;

matter;* which is thought to be that quality in all our food which renders it nutricious. It is true, bread, as it requires more digestion, will lie longer on the stomach both of infants and adults; and hence, probably, because it satisfies the present cravings, it has been conceived to afford a greater proportion of nourishment, though mixed up only with water, as it too frequently is, it is far less nutritive than has been imagined. Children ought to be frequently hungry, and as often supplied with light food, of which milk is really the most nourishing that we are acquainted with. This could never be doubted, but from its passing so quickly out of the stomach; on which account, indeed, though not the properest food for adults, employed at hard labour, and many hours from home, it is the fittest of all

* The sugar, or salt, of human-milk is one third more in quantity, and its extract, or solid contents, is double as much as in cows. See the *Table* at the end of the *Introduction*.

for

for the sedentary life of a tender infant, who cannot get that nourishment from bread or other solid food, of which the stomach of the adult is capable. It must have been for want of attending to this consideration, that Dr. ARMSTRONG has said so much in favour of bread and other thick victuals: which, by the bye, he began to make use of for his own children (from its success in whom he has ventured to recommend it,) at the age of six or seven months; a matter very different from stuffing an infant with it almost as soon as it is born. For every thing the stomach cannot digest, it has been said, may be justly considered as a poison, which if not puked up, or very soon voided by stool, may occasion sickness, gripes, what are called in-ward fits, and all the train of bowel complaints, which may terminate in one or other of the evils just mentioned. And this I see almost daily exemplified; new-born infants after being so fed, and seemingly thriving

for a short time, suddenly falling into a purging, or being carried off by fits.

Milk itself, (like all the other animal juices (is produced from food taken in by the mother; and is the richest part of it. It is in her stomach that the aliment is digested, which by a combination of powers in the chylopoëtic viscera, is so far animalized as to be converted into a kind of white blood; from whence it has been observed, every animal body is daily recruited. Hence it is very apparent, that previous to an infant having acquired strength enough to convert solid food into this wholesome chyle, the parent, by this wise substitution in nature, has, in a great measure, previously, accomplished this work for the infant she is to nourish. During infancy, therefore, both nature and reason most clearly point out the expediency of a milk diet;* but how long it

* Whether the parent be able to suckle her own child, or that office be performed by a hired nurse, is not here particularly considered. The design is only to

it ought to be persevered in, or infants wholly confined to it, is not easily ascertained, and will be further considered in its place, with a latitude that the question demands. There is a period in life, indeed, to which this nutriment is more particularly adapted, both experience and theory demonstrating it to be more suitable to young people than adults, as ARBUTHNOT has remarked; and it has been observed, that it does not appear, that the stomach of the cow will produce the same change upon milk, as that of the calf does, which is, therefore, constantly made use of in dairies, for separating the curd from the whey.

It can scarcely be improper before I entirely quit the article of suckling, to relate a recent instance, and a remarkable

to prove that milk is in general the most proper food for an infant. Whether that, indeed, be prepared by its own mother, a nurse, or by such animals as the cow, or the ass, is equally to the purpose; where the former cannot be had, the best and most natural substitute should be provided.

one out of many, as a proof of the degree to which infants may pine for the breast, even to the great hazard of perishing for the want of it, where the real cause of the disease is not suspected. This little history will likewise further serve to illustrate the preference of human-milk which has been so strongly insisted upon.

The little infant alluded to was very healthy when it was three months old, and was then weaned on account of the illness of the wet-nurse; but soon afterwards ceased to thrive, and had continual bowel complaints. At the age of nine months I was desired to visit it, and was informed that it slept very little, was almost incessantly crying, and had for many days brought up nearly all its food; was become very rickety, and had all the appearance of an infant almost starved. Trial had been made of every kind of food, except the breast, and the child been many weeks under the care of an experienced apothecary; was constantly in a state of purging,

purging, and seemed to have been just kept alive by art.

On the first sight of the child, and upon the face of this account, it was very evident, that this infant was not nourished by the food it received, and that the complaint lay wholly in the first-passages. But reduced as it was, I had little expectation from medicines; and therefore gave as my opinion that either the child still pined for the breast, in which case, I doubted not, it would take it, though it had now been weaned six months; or, that it ought to be carried immediately into the country, and be supported for some time only upon asses-milk, or perhaps be fed, now and then, with a little good broth.

My advice being taken, a good breast was procured, which the infant seized the moment it was put to it, and after sucking sufficiently, soon fell asleep for several hours; waked without screaming, and took the breast again. It is sufficient to add, that the child ceased to puke or be purged, and recovered from that hour;

and after sucking eight or nine months longer, became in the end a fine healthy child.

Although this instance has something extraordinary in it in respect to the length of time the child had been taken from the breast; and though infants are generally completely weaned in six or seven days at the furthest; it is yet no uncommon thing for children, when ill, to take to it again, after seeming to be thoroughly weaned for three or four weeks. And this circumstance is the more worthy of notice, as it sometimes is a very fortunate one; and should lead to making the trial whenever infants newly weaned may be seized with any complaint, under which a return to the breast may be useful. Such, particularly, as the hooping-cough; under which I have known a child of more than a year old, and apparently thoroughly weaned for a month, take to the breast of a stranger very cheerfully, in the presence of its former nurse, with the precaution only of leading it to make the first attempts

tempts during the night. Such children for the few first days turn away from the new wet-nurse to their former one, as soon as they have satisfied themselves at the breast, and go back to the nurse again very readily whenever they find an inclination to suck.

To return; I am free then to lay it down as an axiom, that milk ought to be the chief part of the diet of infants for a certain time, whether it be breast-milk or any other; and that it will prove sufficiently nourishing for nineteen out of twenty, I might perhaps say ninety-nine out of a hundred: exceptions, I believe, there may be, but much fewer children would perish if no exception were to be made, than by absurdly rushing into the contrary extreme. But supposing a very strong child, at the end of the month, really not satisfied with milk only, and always craving the moment it has been thus fed, it, doubtless, may have a little boiled bread added to it, two or three times in the day; but I should be very cautious

cautious of extending it further.* In the case, however, of an infant at the *breast*, if it be always craving as soon as it is taken from it, the occasion of its craving will generally be found to be in the nurse's milk; previously therefore to allowing a more solid food, the quality of the milk, as well as the state of the nurse's health should be inquired into, and the milk be changed if its goodness be suspected. Perhaps where bread and milk is allowed, whether at a very early or a later period, it would be an advantage to boil a piece of roll, together with the upper crust, in a good deal of water, till it is very soft, by which means the bread

* "In *Italy*, *Holland*, *Turkey*, and through the whole "*Levant*, children are rarely allowed any other food "than the breast-milk, during the first year, (BUFFON,: and the Savages in *Canada* suckle for four or five, and often six or seven years.—In some extreme northern climates (as hath been already remarked) we know they can have no other food, for a long time, and yet, there, the death of an infant is as rare an event as that of a suckling mother.

will

will part with some of its acescent quality; the water should then be strained off, and the bread mixed up with the milk, which ought to be boiled if the child is very young, or inclined to a purging.

It would, I perceive, lead me beyond all bounds to enter further into this matter; I shall therefore only add, that infants certainly ought not to be fed lying on their backs, but sitting upright; as they will in this position swallow their food more easily, as well as more readily perceive when they have had enough. So also children nourished at the breast, ought to be withdrawn from it for a short time, especially just after waking from a long sleep; whereby, besides other advantages, much undue labour to the stomach may be prevented, as well as enabling it to retain what it has received; a part of which very frequently is otherwise thrown up.

If Milk be the proper food for infants brought up by hand, the next inquiry will naturally be, what milk is the best? and what

what is the fittest instrument for feeding with? And it is from long experience, as well as from reason and analogy, that I venture again to recommend the ingenious contrivance of the late Dr. HUGH SMITH, set forth some years ago in a treatise on the Management of Children, in a series of letters addressed to married-women. The milk he likewise advises, is cow's milk in preference to all others, as being the most nourishing, and therefore, in general, the most proper; and I wish to refer the inquisitive reader to such other reasons as the Doctor has given, to which I can add nothing but my own experience of their validity. To the milk should be added a little thin gruel, or barley-water, which forms a very smooth and pleasant nourishment. A few weeks after birth, (and I think in general the sooner the better) instead of the barley-water or gruel, there should be mixed with the milk a small quantity of a light jelly made from harts-horn shavings, boiled in water to the consistence that veal broth acquires

acquires when it has stood to be cold.* The design of the jelly is obvious and rational, at once calculated to render the food more nutritive, as well as to correct, in some measure, the acescency of the milk; this quality being thought to abound in the milk of different animals, in proportion to the quantity of vegetables on which they feed.† And the milk of quadrupeds, we know, is produced from vegetable juices only, whilst breast-milk is formed by a mixture of animal and vegetable food. A little Lisbon-sugar may be added to this compound of jelly and milk, if the child be not inclined to a purging, or in that case a little loaf

* There is sometimes a difficulty in making this jelly, on account of the harts-horn being bad; those who shave it, often mixing with it the shavings of trotters, which may, however, be distinguished by their brittleness. If the shavings are good, two ounces of them boiled very slowly in a quart of water to a pint, will make the jelly of a proper consistence.

† See Dr. YOUNG, *De Natura et Usu Lactis, in diversis Animalibus.*

sugar;

sugar; but the less of either the better. It will be proper to have the milk and jelly warmed separately, and no more at a time than may be wanted; when it should be put into the small pot Dr. SMITH has contrived for the purpose, which must be very carefully cleansed and scalded at least once every day, and the spout be thoroughly rinsed, lest any sour curds should stick about it; and to this end, it may be convenient to be provided with two.* At first the milk ought to be

* The objection to this mode of feeding, made by a writer at *Dover*, that the pot may often be left foul, and therefore the food become sour, appears to me to be very far fetched; since if nurses are not to be depended upon in matters of cleanliness, and the sweetness of the food they are to administer, we can trust them in nothing, and infants must be continually suffering; there being a hundred particulars essential to children's health, in which servants cannot be always superintended, but must be entirely confided in.

Having been often sent to for a direction to the shops where the infant feeding-pot may be met with, I notice in this place that it is always kept at Mr. *Philips's* in Oxford-street, near Cavendish-square; *Storer's* in Piccadilly, near to Park-lane, and at *Neale's Staffordshire warehouse* in St. Paul's Church-yard.

boiled,

boiled, to render it less opening, but when the child is several months old, or may chance to be costive, the milk need only be warmed. If it be fresh from the cow, and very rich, a portion of water may be added to it, whilst the infant is very young. Indeed, it ought to be as new as possible, since milk, as an animal juice, probably contains some fine subtile particles, which evaporate upon its being long out of the body.

Though I have said cow's milk is usually preferable to any other, it will be conceived, that I mean for infants who are strong and healthy. Asses' milk, on the other hand, being more suitable for many tender infants during the first three or four weeks, or perhaps for a longer time, as well as for children who are much purged; as it is thinner and having far less curd than any other milk, it sits much lighter on the stomach, both of tender infants and adults. And, perhaps, it may be inferred, from the very different proportion of cream, and of cheesy principles,

ciples, that the milk of different animals contain, that providence has rather considered the benefit of man than of the young of various quadrupeds; though, doubtless, the milk is likewise properly adapted to them.

In regard to the mode of feeding infants, I can say from experience, that for the delicate and tender at least, the boat, the spoon, and the horn, are in no wise comparable to the pot; which is so contrived, not only as to please the child by its resemblance to the nipple, and the milk coming slowly into its mouth, but also to afford the infant some little degree of labour, in order to acquire the quantity it needs, (which the horn does not;) by which means the food is also duly mixed with saliva. The like little fatigue takes place in children nourished at the breast, and by this mean it is, that infants, eſpecially when very young, are not so apt to over-suck, as they are to be over-fed by the boat or the spoon, the food of which being sweet and pleasant, and requiring only

only the trouble, or rather the pleasure of swallowing, the child is tempted to take too much at a time; whilst the nurse often forces down a second or third boat-full, in order to put a stop to the cries, which indigestion from the former may have occasioned.

The writer just now alluded to, as well as Mr. Le FEBURE DE VILLEBRUNE detracts from the advantages of this mode of feeding, by observing, that infants may be fed as slowly and cautiously by the spoon: but the fact is, that this is, indeed, one of the things in which servants *cannot* be depended upon, whilst there are such temptations to the contrary, (at least I have not met with many who could;*)

* Amongst the exceptions I have met with, I was lately greatly pleased with a nurse, who said, "I always let my children *ask* for their food;" which she pertinently explained by saying, I do not feed infants because they cry; but if, after fasting a reasonable time, they begin to mourn, I endeavour to amuse them till they anxiously hunt about them, and repeatedly form their lips in a certain way, that assures me it is a want of food only that makes them complain.

nor will children, indeed, oftentimes endure slow feeding, if they can anywise prevent it, but will be screaming all the while, instead of being kept quiet by their food: though the hope of quieting them, it has been observed, is frequently the nurse's sole motive for giving it. But when an infant *can* get it only slowly from the pot, and yet is itself all the while employed in the business, it will be agreeably diverted while it is acquiring its nourishment, in the same manner that it is amused at the breast.

The pot is formed in the shape of an Argyle, or gravy-pot, with a long spout, rising from the bottom, and pierced only with a few small holes at the end, which is to be covered with a piece of vellum, washing-leather, or parchment; which being left loose a little way over the spout, is soft and pleasant to the infant's mouth, and it has been said, is nearly as acceptable to many children as the breast, as I have often been a witness.

This

This manner of feeding is not only pleasant to the child, but very convenient to the nurse, and the food equally at hand in the night as the day, being easily kept warm by a lamp, or even in the bed. The only objection I have ever known made to it by those who have made trial of it, is that which I esteem one of its highest recommendations, which is, that children thus fed are frequently hungry, that is, they are what nature designed them to be; this food sitting light on the stomach, and being easily digested, like the breast milk, children often need a supply of it.

I shall just mention another popular objection to the plan here recommended. This is taken from some fine children we meet with, who have been brought up by hand from the birth, and fed with thick bread victuals all the day long, whilst we every now and then see some of those who have been debarred that sort of diet, weak and tender till they become a year or two old. Not to stop here to observe, that this objection militates equally against chil-

dren living on the breast, though that is the food nature has designed for them, it will be sufficient to say, that it is only strong children who may be bred up almost anywise, that can at all digest thick victuals; that there are others who cannot endure the least thickening in their food, nor any kind of bread; and that weakly infants, who are scarcely preserved by the most careful attention to their food, would soon be hurried out of the world if that attention were withheld. And this reminds me of an observation of a very judicious friend in the north of England, which greatly surprised me at the time, as I had never met with any observation from him before, the propriety of which was not exceedingly obvious and convincing. Upon seeing a number of fine children one day in *London*, he with some shrewdness observed, that we did not seem to have so many weakly half-starved children as he met with in the country, and that he had often before made the like observation in his journies to town. It appeared to me that

that my friend must lie under some mistake, and I accordingly mentioned my surprise at such a remark coming from him; when he removed my astonishment by insisting on the fact, with the following obvious solution of it. I apprehend, says he, there are scarcely any but fine and strong children in *London*, who live to be two or three years old, the weaker ones, for want of good air, and exercise, sinking under their infirmities; whilst the tenderest children in the country by being turned out to crawl in the wholesome open air, or by sitting at the door almost all the day, escape the fatality of your gross air and warm nurseries, and survive the trying periods of infancy, though some of them remain weak and rickety till they become old enough to endure severe exercise, which can alone strengthen them effectually.

I have no doubt of there being certain exceptions to the mode of feeding I have recommended, that are worthy of more attention, although very few have actually

come to my knowledge, and though I am persuaded, that as a *general* plan, it is both a natural and salutary one. Instances may be met with, however, of some very athletic children who may require a more nourishing, and perhaps somewhat more solid diet; and the state of bowels in others, will call for a greater variety of food, and of a kind not calculated to be administered in the mode here recommended, as hath been already noticed under the head of purging. On these accounts, I would offer another observation or two in regard to the thicker kind of victuals; and first, that in families accustomed to bring up their children by the spoon, I think I have found a greater number of infants well nourished by the French, or the Uxbridge-rool boiled in water to a jelly, and afterwards diluted with milk, than on any other kind of pap. From such families I have likewise learned that some *change* in the food is, however, frequently necessary, and will be indicated by the degree of relish

relish which the infant may discover towards different kinds of food, as well as by their effects on the bowels; though the child be not supposed to be at such times really unwell. Such changes principally respect the *different kinds* of bread, or other farinaceous substance usually mixed with milk, and sometimes the substitution of broth, for a few days, in the place of the latter.

When children brought up by hand become four or five months old, especially if strong and healthy, they may, doubtless, be allowed a thicker kind of victuals, because their digestive powers being by this time become stronger, they are able to extract good nourishment from it; though this change is not equally necessary for children brought up at the breast, at least, such do not require it so early; breast-milk being more nourishing than any other. The first addition of this kind, however, whenever it becomes necessary, I am persuaded, ought to be beef-tea or

broth,* which with a little bread beat up in it in the form of panada, will be at once an agreeable and wholesome change, and prepare them for further advances in this way. But as this cannot well be given oftener than two or three times a day, a little bread and milk may also be allowed them every morning and evening, as their strength and circumstances may require. A crust of bread likewise, as soon as the child has a couple of teeth, will amuse and nourish it, whilst it will assist the cutting of the rest, as well as carry down a certain quantity of the saliva; a secretion too precious to be lost, when the digestive powers are to be further employed. As the child grows older, to broth may be added light puddings, made of bread,

* "I cannot help remarking here, that the gravy "of beef or mutton, not over roasted, and without "fat, properly diluted with water, is the wholesomest "and most natural, as well as nourishing broth that "can be made.". Dr. HUGH SMITH.

semolina,

semolina, tapioca,* or rice; salep boiled in milk, and such like. But to feed a child with veal, chicken, or other animal food, before nature hath given it teeth enough to chew it; howsoever small it may be minced in the kitchen; is altogether as unnatural,† and can prove nourishing only to such children, as from the great strength of their natural constitution, need least of all the assistance of art. It is by degrees only, that children ought

* The best *tapioca*, I believe, comes from the *French West-India Islands*, and is called by the general term, *farine*. It is in very common use also in our *West-India Islands*, where it is made into thin cakes, and is called *cassada* §: in this form, therefore, it is most likely to be genuine, and may be preserved for a very long time.—Two ounces of *tapioca* should be boiled slowly in three pints of water, to a quart, and be then passed through a sieve: a little milk being added, or not, as circumstances may direct.

† Ante dentium eruptionem non conveniunt cibi solidiores [illegible] natura quæ nihil frustrà facit, & non deficit in necessariis, dentes ipsis denegavit, sed lac concessit, quod masticatione non eget. PRIMROS.

§ The Satropha Manibot of LINNÆUS.

to

to be brought to such food; which at a certain period, indeed, is as necessary as a light diet at an earlier age. For it is certain, that the error of some parents runs the contrary way, and their children are kept too long upon a fluid, or too slender diet; whence their bellies and joints become enlarged, and the bones of the lower extremities too weak to support them, at an age when they want more exercise than their nurses can give them. For when they go alone, not only is a little light meat and certain vegetables to be allowed them once a day, or alternately, with broths, puddings, or blamange, white-pot, custards, and such like kitchen preparations of milk,* but even a little red wine is beneficial to many constitutions. This will not only promote digestion, and obviate in great measure a disposition to worms, but by strengthening the habit, will also render children

* "Infancy and childhood demand thin, copious, nourishing aliment." ARBUTHNOT, *On Aliments.*

less

less liable to become rickety, at the very period they are very much disposed to it. Such a plan is the rather insisted upon, because some parents the most desirous of doing right, fall into a like mistake even in regard to older children, whom they keep too low, allowing animal food only every other day to those of four or five years of age; which, unless in very particular habits, is surely an error, at least in this damp climate; and disposes to scrofula. But so many little infants, on the other hand, fall a sacrifice to the use of indigestible food under the age of six months, being carried off by vomiting, purging, or fits, that whoever would preserve them over the most dangerous period of infancy, cannot too cautiously attend to their diet at this time.*

It

* From a note in Dr. SMITH's letters it appears, that the average of births annually, within the bills of mortality, for ten successive years, was 16,283; out of which were buried under *five* years of age 10,145, and from amongst these 7,987 were under *two* years. So

that

It is a common direction in works of this kind, to point out the properest times for feeding an infant brought up by hand, and to direct how often it may safely be fed. I shall just observe therefore, that no adequate rules, can be laid down on the occasion, and on that account none ought to be attempted, since none can

that almost *two thirds* of the children born in *London* and its *environs*, become lost to society, and more than *three fourths* of these die under *two years of age*.—This proves how hazardous a period that of infancy is, in this country; and I am sorry there is so much reason to be persuaded, that the want of air, exercise, and a proper diet, has added unnecessarily, to its dangers; there being no such mortality in barbarous nations, whose inhabitants live in a state of nature, nor in any part of the known world, amongst other young animals. Although these, and other calculations I have seen, should be found ever so accurate, it is a pleasant reflection, (to whatsoever the circumstance may be owing) that since the time they were taken, the proportion of deaths at the early period above alluded to, has been very considerably decreasing; and the writer has noticed, that for some years the average of deaths, according to these bills, has not been more than *six* in *sixteen*; which is but little more than *one third*.

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be sufficiently comprehensive; and I am happy in not being at all at a loss in this instance wherein writers have differed so widely. For infants not usually taking too much at a time in the manner of feeding that has been recommended, on account of the little fatigue, which, it was observed, they undergo in acquiring their nourishment, may generally be permitted to partake of it as often as they might of the breast.* This is, however, by no means the case, when children are allowed to eat thick victuals, and are fed by the spoon, by which, it has been said, they are always in danger of taking too much, an evil that cannot be too often pointed out.

Before I close this head of the management of children, perhaps the most important of all, I shall point out the most suitable diet under the different complaints to which they are most liable. And after the hints that have been thrown out

* Optimum vero medicamentum est opportunè cibus datus. CELSUS. *De Med.*

through

through the former part of this work, I need only observe, that as light a diet as is possible is usually called for when a child is unwell, let the disorder be almost whatever it may. If a fever should accompany it, the child will require still less food than in any other complaint, but plenty of drinks; which may also be so calculated as to furnish nearly as much nourishment as the infant will require, and may in summer-time be given cold. Such are barley-water, water in which a crust of bread has been boiled, and thin tapioca; or if a purging attends, rice-water, and a drink made of harts-horn shavings, with a little baked flour in it. In this complaint, wherein more nourishment is required to support the child than under most others, (if not attended with fever,) baked flour mixed up with boiled milk, (as mentioned under the article of purging) is admirably calculated both as a proper diet and medicine; and if kept in a dry place, may be preserved fit for use for a considerable time. For the like complaint,

plaint, arrow-root, or the food directed by Dr. SMITH is very well adapted, and will afford a little variety. He orders a table-spoonful of ground rice to be boiled with a little cinnamon, in half a pint of water, till the water is nearly consumed; a pint of milk is then to be added to it, and the whole to simmer for five minutes: it is afterwards to be strained through a lawn sieve, and made palatable with a little sugar. In this way, or joined with baked flour, as mentioned above, milk may generally be made to agree perfectly well, even when the bowels are purged; and when it does so, proves exceedingly nourishing. Should it chance to disagree, owing to the great acidity of the first-passages, good beef-broth ought to be made trial of, which may be thickened with baked flour, instead of bread, and makes a very pleasant, as well as anti-acescent diet. Likewise the patent sago, properly boiled, adding to every half-pint a large tea-spoonful of red Port wine, for the use of infants of a week old; cautiously

cautiously increasing the quantity of wine, as they grow older. A large family of children whose bowels had been continually disordered by various other food, has been brought up by this, which was persevered in till they had four, or more teeth, and were able to partake of pudding and other common food.

Perhaps much more has been said on the subject of acidity, by some writers, than really ought to have been, or it may at least be suspected, that a proper attention has not been paid to the peculiar circumstances of infants, who are all much disposed to it. Acidity when injurious, is, probably, oftentimes rather an effect, than the first cause of the disorders of infants. It seems, indeed, to be natural to them, arising alike from the weakness of their organs of digestion, and the nature of their food; though there is no doubt, that their complaints are afterwards aggravated by an abounding acid, or rather, probably, from this neutral acid becoming morbidly acrid, through over-feeding,

and

and other errors in their diet, or from its being accidentally confined in the first-passages. Nature, however, seems to have designed the food of infants to be acescent, and till the body be disordered, and digestion hurt from one cause or other,* this quality of their food is not likely to be very injurious to them, and, probably, far lesss so than food of a very alcaline nature would be, with a little weak digestion. It is true, indeed, that as many similar complaints in adults, who feed on different diets, will, cæteris paribus, have their varieties, and each have some relation to the different qualities of their food; so it is not to be wondered at, that the complaints of infants should be attended with wind and other marks of acidity, which in adults are usually the least hurtful of all; and are, indeed, for

* Such cause, it has been observed, may be an over quantity, or too sweet a food, or heavy and indigestible diet; which, indeed, prove more frequent occasions of a distempered acidity, than any thing else.

the most part, pretty easily corrected in children, while that is the only complaint. When they are much troubled with wind therefore, it cannot be wrong to mix some carminative seeds, or the waters distilled from them, now and then, with their food, such as sweet fennel, or cardamom seeds, bruised very fine; but the aq. anæthi is that I have generally recommended, and being a liquid, is always ready to be added to the food, without loss of time. But though such an occasional addition to their food is often exceedingly useful, I cannot help speaking against its being made a constant practice, by which children not only suffer when by accident, or absence from home, it has been neglected, but it destroys the very end for which it was used, by the stomach becoming accustomed to it.

Children, however, become less subject to wind and hurtful acidities as they grow older, and the stomach gets stronger, as it is called. But should these complaints, notwithstanding, continue obstinate,

nate, a little fine powder of chamomile flowers, or a few drops of tinctura columbæ, mixed in water, and warmed with a little ginger, will prove exceedingly bracing to the stomach and bowels, and render them less disposed to acidity. Exercise also according to the age and strength, is a grand preservative and remedy, and especially making infants break wind after sucking or feeding. And this may generally be effected, as every one knows, by raising the infant up, and gently tapping it on the back, or rubbing its stomach, before it be laid in the cradle to sleep.

I shall only add further, that when milk is frequently thrown up curdled, a little prepared oyster-shell powder may be added to it, or a very small quantity of almond-soap, or of common salt, which will not at all injure the flavour, and will prevent this change happening too soon in the stomach.

I shall now close this head, with some observations relating to Wet-nurses, and to Weaning.

The first and essential point in a wet-nurse is, doubtless, that her milk be good; to which end it is necessary she be healthy and young, not of weak nerves, nor disposed to menstruate whilst she gives suck, and that her bowels be rather costive than otherwise. Her nipples should be small, but not short, and the breast prominent, and rather oblong than large; such distention being rather from fat, than from milk. The chief marks of good milk, are its being thin, of a bluish colour, rather sweet, and in great quantity; and if under six months old, it is, doubtless, an advantage. And this is of more consequence, than it seems of late years to be thought; for after this time it generally becomes too thick for a new-born infant, and is not easily digested. On this account, though an infant may not be really ill, I have frequently observed it not

not to thrive, though it take great plenty of such milk.—A wet-nurse ought to have good teeth, at least, her gums should be sound, and of a florid colour. She must be perfectly sober, and rather averse from strong liquors; which young and healthy people seldom need in order to their having plenty of milk. She should be cleanly in her person, good-tempered, careful, fond of children, and watchful in the night, or at least, not liable to suffer in her health from being robbed of her sleep.

The diet proper for wet-nurses is likewise worthy of notice. And here, an invariable attention should be paid to natural constitution and habit. Due allowance being made for these, it may be said, that milk, broth, and plain white soups; plain puddings, flesh meats of easy digestion, and a due mixture of vegetables; with plenty of diluting drinks, and such proportion of more generous liquors, (spirits excepted) as the variety of circumstances shall direct, will be a proper diet for suckling women. Respecting ve-

getables particularly, the strictest regard should be had to constitution and habit. Wherever vegetables, or even acids, uniformly agree with the suckling parent or nurse, I believe healthy children will rarely suffer by her partaking of them; but on the contrary, the milk being thereby rendered thin and cooling, will prove more nourishing and salutary, in consequence of being easier of digestion. To these regulations should be added an attention to exercise, and frequent walks in the open air: to these, hired wet-nurses have been previously accustomed, and are therefore sure to suffer by confinement to warm rooms, equally to the injury of their own health, and of the infants they suckle.

I come now to the article of weaning of children; the proper age for which will depend greatly upon attending circumstances. A child ought to be in good health, especially in regard to its bowels; and, doubtless, ought first to have cut, at least, four of its teeth. This seldom takes place till it is near a twelvemonth old;

old; and it may be observed, that healthy women who suckle their own children, and take proper exercise, do not usually become pregnant again in less time. We shall not be very wide, therefore, of the order of nature, if we say that children in general ought not to be weaned much earlier than this; making proper allowances, however, for all just exceptions to general rules,* and especially as far as teething may be concerned.—Small and weakly infants, if rather feeble than ill, are oftentimes benefited by being weaned; they should therefore, about this age, be taken from the breast, instead of being, on account of weakness, nourished much longer in that way: a trial of such a change should, at least, in most instances be made.

Any preparation for weaning is generally needless, and especially that of feeding children before-hand, though made a

* ASTRUC advises children to be suckled till they are two years old; but without giving any sufficient reasons.

common excuse for stuffing them whilst at the breast with indigestible food. I have seen many mothers needlessly torturing themselves with the fear of their children being weaned with difficulty, because they could not get them to feed when eight or ten months old, and still at the breast; but I have always found such children wean, and feed just as well as others, when once taken wholly from it. I, therefore, never have any fear in that respect, and therefore wish to counteract, if possible, a sentiment encouraged by several writers, which has, I believe, no real foundation in fact, but has too often been productive both of much inconvenience and mischief. But I do not by this intend to say, that a child of eight or ten months old would be injured, or oftentimes not benefited, by a little food, once a day, of a more solid nature than the breast-milk, as, indeed, I have intimated before; but when children happen to be weaned much earlier, and are fed almost from the birth merely with that view, (which

(which is often the case) they may be essentially injured by it.

It has been remarked, that infants who are indisposed to feed at all while at the breast, are nevertheless weaned, and feed just as well as others, when once taken wholly from it. There is, indeed, in a few children a little difficulty for the first two or three days under any circumstances; but it is remarkable, that the instance attended with the greatest aversion to common food, that I ever witnessed, was in an infant who had been allowed a little chicken broth once a day for two months before the weaning was entered upon. This child was very healthy, slept well, and scarcely cried at all upon being taken from the breast, and yet would not receive even the food it had been accustomed to; so that for six and thirty hours, it continued averse from every thing that was offered to it, though it appeared in very good humour. After the second day, however, it took a moderate breakfast, and

and in a little time it fed as readily as other weaned children.

Under such circumstances, if the infant be in the least degree costive, a little magnesia and rhubarb should be administered, which besides opening the bowels, will tend to create an appetite. Such infants also, where there are more children in the family, should sit at table with them when taking their meals; as they will thereby, through mere imitation, be disposed to take food.

When the weaning is once entered upon, a great part of their food ought still to be of milk, with puddings, broths, and but little meat; and every kind of food, and even drink should be prohibited in the night, even from the first, supposing them to be weaned at a proper age. The mere giving them drink, even only for a few nights creates the pain and trouble of two weanings instead of one, and if it be continued much longer, it not only breaks the rest, but the child will acquire a habit of

of being fond of drinking; the consequence of which very often is a large belly, weak bowels, general debility, lax joints, and all the symptoms of rickets. The child need only be fed the last thing before the nurse goes to bed, which may generally be done without waking it; and whilst the child seems to enjoy this sleepy meal, it becomes a most pleasant employment to the mother, or nurse, from observing how greedily the child takes its food, and how satisfied it will lie for many hours on the strength of this meal; the mention of which naturally leads to the consideration of the next Article proposed, viz.

SLEEP *and* WATCHING.

AFTER what has been already advanced on this article, under the head of their complaints, only a few observations will be necessary in this place; and first, that healthy children sleep a great deal for the first three

three or four days after they are born, probably from having been previously accustomed to it. They ought not however, to be suffered to continue this habit in the day time, to the degree some children are permitted, but should be gradually broken of it; and indeed if not indulged, they will not be so much disposed to sleep as is generally imagined, and will therefore take more rest in the night; which is mutually beneficial to the child and the mother, if she be in the same room, who especially if she suckles, will be less disturbed, at a time when she particularly requires this refreshment.

Therefore, when infants are sleepless in the night, they should be kept more awake, and have as much exercise as possible in the day time, which though they be ever so young may be pretty considerable, (as will be directed more at large in its place,) by playing with them, or dandling on the knee, and otherwise amusing them; and when older, by every kind of exercise they can bear. The child, if healthy,

thy, will soon contract a habit of being very much awake while it is light, through that lively and restless spirit peculiar to infancy; and by this means, another evil will be very much avoided, that of often laying a child down to sleep in the day time, for hours together, loaded with a thick dress, and covered besides with heavy clothes in a soft cradle or bed.

But though I am confident these cautions will have their use, I am equally satisfied that many children have much less sleep than they require; but then this deficiency is chiefly in the night, and is often the consequence of some complaints which the child labours under. Upon these, however, sufficient has already been said in the former volumes, to which therefore the reader is referred.

Before I quit this article, it may be remarked, that the custom of constantly placing infants on their backs, whether in the cradle or bed, is very improper; for by this means, the superfluous humour secreted in the mouth, which, in the time of

of teething especially, is very considerable, cannot be freely discharged, and must fall down into the stomach, where its abundance occasions various disorders;* Infants should therefore be frequently laid on their sides, particularly the right, as favourable to the stomach getting easily rid of its contents; to which side also children, when strong enough, will instinctively turn, if not prevented by the weight or confinement of their own clothes, or those of the cradle, or bed. The chief apology for all which, is a fear of the infant's falling, or turning on its face; but this is rather an apology for the neglect of that necessary attention to children, which whenever it can be commanded, should never be spared them.

It only remains, under this article, to say something of the Cradle, which most writers have spoken against. I believe, there is no doubt but the custom of laying children down awake, and rocking them

* *See vol.* I, *page* 6.

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in a cradle in the day time, or at seven or eight o'clock in the evening, when they are to go into their night's sleep, as it is called, may be an occasion of making them more wakeful in the night; or at least may cause them to expect that kind of motion whenever they awake. But yet I cannot help thinking, there is something so truly natural as well as pleasant, in the wavy motion of a cradle, (when made use of at proper times) and so like what all children are used to before they are born; being then suspended and accustomed to ride, as it were, or be gently swung in a soft fluid, upon every motion of the mother, and even during her sleep, from the effects of respiration; that always wishing to follow nature as I do, I cannot, on the whole, but give an opinion rather in favour of the cradle. It is, at least, among the *little* things in which we may harmlessly err, and in which every mother may therefore be safely guided by her own opinion, or even by her feelings.

And

And if the child in consequence of being sometimes rocked to sleep in the day time, shall expect it when it awakes in the night, it will not be very difficult to find a substitute for it; and indeed parents seem, as it were by instinct, to pat and gently move a child whether lying on the lap or the arm, whenever it appears to awake prematurely. The objections to the cradle made by some late writers, militate only against the abuse of it, from any violent rocking; as though infants must necessarily be jumbled in a cradle like travellers in a mail-coach. For I cannot easily persuade myself, that we are in every thing become so much wiser than our fore-fathers; with whom for some ages, and in distant countries, amongst rich and poor, the cradle has been judged to be a necessary part of family furniture. And in regard to watchfulness, as was observed in another place, it is usually a mere symptom, and should be treated according to its cause; but in a general way it may be said, that nothing can so safely

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and effectually contribute to procure natural rest as that exercise to be further considered under the next head.

MOTION *and* REST.

IT is chiefly the former of these that will claim our attention, as infants ought scarcely ever to be in a quiescent posture, except when asleep; and happy for them, that active principle with which nature hath endowed them, is so vigorous and overflowing, that they will hardly submit to it. Exercise, like air, is indeed of so much importance to children, that they cannot possibly be truly healthy without it; care only should be taken that it be properly suited to their age.

The firſt kind of exercise, it has been said, consists in dandling, as it is called, patting the back after feeding, and gently raising the child up and down in the arms; taking care at first not to toss it very high, infants being very early susceptible of fear, and even capable of being thrown into

fits by it. Another exercise adapted to this tender age, and of the utmost advantage, is rubbing them with the hand. This should be done *all over*, at least twice a day, when they are dressed and undressed, and especially as noticed before, along the whole course of the spine; and ought to be continued for some time, being peculiarly agreeable to the child, as it constantly testifies by stretching out its little limbs, and pushing them against the hand, with a smile expressive of the satisfaction it receives from it. Such gentle exercise may be partially repeated every time the child's cloths are changed, by rubbing the lower limbs, and every other part within reach. Likewise dashing the face with cold water, in the manner recommended for the rickets,* but more lightly, will produce the effects of exercise well adapted to this age.

When children are older, their exercise should be proportionally increased, and as has been observed, they ought never to

* Vol. I. page 330.

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be carried in a quiescent posture, but the arm that supports them should be continually in such motion as the nurse is able to continue. For children, it has been noticed, delight to be in constant motion; and this exuberant activity is given them for the wisest purposes, and ought by no means to be counteracted. And I notice the mode of carrying them, because I have seen children slung carelessly over the arm in such a manner, as neither affords the child any exercise, nor allows it to give any motion to itself; which a lively child will always endeavour to do. And, indeed, the manner of carrying an infant is of more importance than is generally imagined, for from it, the child will contract a habit, good or bad, that it will not readily give up, and may be as much disposed to become rickety by improper management in the arms, as if it were lying wet in the cradle; the ill effects of which have been pointed out already.

It may be a proper enquiry in this place, at what age children should be put on their feet, a point on which people have differed considerably; but I apprehend nothing more is required than to follow nature, whose progress is always gradual, as our imitations of her should be, and we shall then seldom run very wide of her intentions. If we take notice of a healthy child, it has been said, we shall observe it to be always in motion, and as soon as it gets strength, it will be supporting itself by the help of its hands and feet, and be crawling about wherever it is permitted. From this exercise, it will soon acquire an increase of strength, and whenever it is upheld by the arms, and disentagled from the weight of its clothes at the time of dressing and undressing, it will naturally walk up the waist of its mother, or nurse; and by this manner of moving its limbs, and its bearing more or less on the arms, will shew what advances it has made. Whenever it is strong enough, it will have attained sufficient

ficient knowledge to walk by itself, and will never attempt it till it is fully equal to the task. It will then be perfectly safe to permit it to follow its inclination, at least as far as the straitness of its limbs is concerned; and I think I may defy any one to produce a single instance of a child getting crooked legs, from being suffered to walk as soon as it has been disposed to make the attempt. But nowise ought Nature to be forced; a maxim applicable to every other occasion; "aware, (as a writer before quoted,* finely observes,) that whatever forms may, by artifice, be intruded upon her, and she compelled to assume, to enlarge or contract her bias and inclination, she can never be made, eventually, to deviate without manifest injury to herself, from the station and bounds unalterably impressed upon her by the unerring Power, which first created and gave her laws."—But the mischief is, we lead on children prematurely to the trial, by back-strings, and goe-carts, and

* Mr. Moss.

other contrivances, calculated only to spare idle nursery-maids, or what is really pitiable, to allow poor people time to attend to other concerns, who are obliged to work for their bread. But where this is not the case, such contrivances are unpardonable, and are the consequence of ignorance, or idleness, which are productive of great evils; and then by way of excuse it is asked, at what age a child may be put on its feet—A question, I apprehend, that ought to be replied to only in the manner I have done*—Leave children to themselves, and they will afford a satisfactory answer in good time.

It is said, however, by a sensible writer,† that children's legs do not become crooked by putting them too early on their feet, and he asks if any other animal has crooked legs, though they stand on

* I have seen a child walking alone before it has been nine months old, and at ten months, carrying a heavy play-thing in its hands, whilst other children, rendered weak and rickety by mismanagement, have been unable to do half as much at two years of age.

† Dr. HUGH SMITH, *Letters to married-women.*

them

them almost as soon as they are born. But the cases, I apprehend, are widely different; quadrupeds and fowls are designed by nature to be early on their legs, and it is necessary they should be so. They are accordingly calculated for it, their bones being strongly ossified from the birth; but this is, by no means, the case with the human species, and therefore no argument can be founded upon it without considerable latitude, and making such allowances for the different circumstances of children as have been pointed out. But if it be meant only to suffer children *to feel their way*, if I may so speak, for themselves, they will never deceive us, nor do I think their limbs ever become crooked, but by urging them to it by contrivances of our own, for which poverty is the only apology that can possibly be offered.

A NOTE of Dr. BUCHAN on the subject of giving exercise to children, which some people from their poverty cannot spare time to afford them, charmed me

exceedingly. The good sense and philanthropy manifested in it, as well as a desire of extending its useful contents, will I hope be apology sufficient for transcribing it, especially as it is at present so apposite to my purpose. And though I cannot flatter myself that Government, however benevolently disposed, will, or perhaps can, at this time, adopt such a plan, either from his recommendation or mine, it is, nevertheless, in the power of people of large fortune, both in town and country, to give it very considerable influence, especially if the premium were made double for such children as should be produced in good health. The Doctor's words are,

" If it were made the interest of the " poor to keep their children alive, we " should lose very few of them. A small " premium given every year to each poor " family, for every child they have alive " at the year's end, would save more in- " fants lives than if the whole revenue of " the crown were expended on hospitals

" for

" for that purpose. This would make the " poor esteem fertility a blessing, whereas " many of them think it the greatest " curse that can befal them;" and I may add, I have known them express great thankfulness, when any of their children have died.

The advice contained in this chapter is further worthy of serious attention from late discoveries of a much greater fatality amongst the children of the poor of this metropolis than I ever suspected.

To ascertain the fact, an inquiry has been for some time set on foot, at the *British Lying-in-Hospital*, at the suggestion of my colleague, Dr. COMBE. Inquiries have likewise been making ever since in different ways; and I have no reason to suspect that the statement made out from the report of the women offering themselves at the Hospital, is at all beyond the fatality in other poor families in *London*, but, indeed, rather under it, in regard to still poorer people.

The

The following is a brief statement of the result of the investigation at the hospital, during the first year:

Several women who had borne

3	Children, had lost as many as	2
4	- - - - - - - - -	3
5	- - - - - - - - -	4
6	- - - - - - - - -	5
7	- - - - - - - - -	6
8	- - - - - - - - -	7
9	- - - - - - - - -	8
10	- - - - - - - - -	9
11	- - - - - - -	8 and 10
12	- - - - - - -	10 and 11
14	- - - - - - - - -	11

and several of the mothers of different numbers had lost them all.

During another long period, only one woman having borne as many as five children, had reared them all; and one having had twelve, had *eight* living. But some having had four, had lost *three*; and five, had lost *four*; and six, *five*; and seven, *six*; and eight, *six* and *seven*; and ten,

ten, *seven* and *nine*; and women having borne eleven and twelve, had lost *eight*, *nine* and *ten*; and fourteen, *eight*: with many who had borne four, five, and six, and one twelve, had buried them all.—In addition to this, may be remarked the sad and rickety state of many of the surviving children.

The above, indeed, contains the most formidable view of this matter, but the most favourable is, by no means, such as to counter-balance it; there being during a year and a half, no more than three women, I think, who having borne only three children; and one woman, (lately come from the country) with four children, who had lost none of them. Only one having had as many as six, had them all living; and another, who had preserved eight children out of ten. Amongst the surviving ones, however, it was frequently observed, was the last born; therefore one less likely to be reared than an older child.

From

From these different degrees of fatality further contrasted with the small number of deaths in the *hospital*, within the month,* we may suspect the different care and attention bestowed upon young children, as well as the want of certain accommodations; and may fairly argue on their effects.

It would be unpardonable not to add a few words in this place with a peculiar reference to *females*; upon whom beside every infirmity common to the other sex, is imposed the painful task of child-bearing. It is the benefit of the lower class of people, indeed, that I have here principally in view; though the caution is not utterly unnecessary elsewhere.—The many distressing, and sometimes fatal labours I have been witness to, have led me to regard with a kind of horror a rickety, distorted female infant, whose parents or nurse's neglect, or ignorance, is heaping up for it additional sufferings and dangers,

* See the *Introduction* to this volume.

to

to those which are great enough under every advantage that art, and good health can contribute.

From the age of two years therefore, or rather earlier, this care is especially called for; and besides every caution already pointed out, lays a strict prohibition on girls being suffered to sit, for hours together, on a low seat, whereby the pelvis is pressed between the lower extremities and the spine, and is made to grow out of its natural form. The consequence of this change of figure, if it be anywise considerable, cannot fail to be productive of increased pain and dangers in parturition, frequently equally fatal both to the parent and her offspring.

I am aware, that many poor people are not in circumstances to give their children all the exercise they require; they may, however, suffer them to afford as much as possible to themselves, by allowing them to crawl about on the floor, near an open window or door, instead of compelling them to lie on their backs, or

to

to sit upright, pinned in a chair; the ill consequences of which are so exceedingly evident.

It is hoped, no apology may be thought necessary for these obvious remarks, since no pains should be thought too great if they may prevent the evils here pointed out, nor can too much be said to inculcate good nursing, (and especially exercise) which is alone adequate thereto.*

A very few words may suffice on the head of REST, the irregularities therein being far less numerous and important than in the former. It will be sufficient to notice them in regard to the improper inducement of young children to continue in action after they feel themselves wearied, and in keeping them out of bed

* A proper attention to this, and many of the preceding articles has been conceived to be of so much importance, that the benevolent Governors of the *British* Lying-in Hospital, some years ago gave orders, that suitable Directions on these heads should be drawn up, and given to every mother, on her leaving that Charity.

beyond

beyond a proper hour. Children in health never wish to sit still when they do not actually feel it to be necessary, much less to go to bed over early. But it is to be remembered, that young people require more sleep, and to be longer in a recumbent posture than adults; for though they usually rise very early, they get to rest more than proportionally soon, being disposed to fall asleep almost the moment they are still; and this is natural to them, and is a demonstration of the advantage of exercise.

Prolix as these articles may appear, it may, nevertheless, add a completeness acceptable to the younger part of the profession, to comprehend under them several things relating to the different *Modes* of Motion and Rest, and pointing out many improprieties that have a natural tendency to induce, or increase various corresponding deformities.

These will relate to the manner of children's *standing*, *walking*, *sitting*, and *lying*, and particularly respect the position of the

the head and feet, and the form of the back, shoulders, and hips. It may not, therefore, be improper in this place, nor it is hoped, be thought going out of the true line of my profession to advert a little to each of these. Indeed, to propose regulations of any kind merely with a view to a graceful manner of standing or walking, would be highly incompatible with the intention of the work; but since this part of it is appropriated to the general management of children, it is hoped the reader may not deem it altogether impertinent that he is invited to pay attention to certain things, which for want of correction whilst children are young, and frequently under the eye of medical people, may by the neglect of their ordinary, and less intelligent attendants, grow up to real evils. For it is very certain, that from an improper manner of resting upon any of the extremities, whether in sitting or otherwise, different parts may take an ill form; and what is worse than an awkward appear-

ance,

ance, (to which their parents are apt to confine their attention) children often grow up weak; whereby the poor become unfit for those labours and exercises for which they are designed, and the necessities of their situation frequently demand.

And I here beg leave to remark, that the very means frequently made use of by people of rank to prevent some of these deformities, may, on the contrary, occasion them. Such are the use of steel-collars, various sorts of stiff stays, and other tight bandages. For I am confident, nor am I singular in the opinion, that when recourse is had to these things, before any parts have taken a wrong turn, they are very likely to occasion it. Not that such contrivances are afterwards improper; for when the bones have, by any means, been thrown out of their natural direction, Art can frequently rectify it, and point out where to apply, or to take off pressure; and has been fully considered in the account of diseases. But before this, and while the bones are growing,

compression, however properly applied, is in effect oftentimes ill-directed, owing to the continual and irregular action of children, especially when they feel any parts unpleasantly confined.

I come now to the circumstances immediately hinted at, and first those which regard the head or neck.

Many infants come into the world either with the neck drawn a little to one side, or an awkward turn of the head appears to take place afterwards. In the latter instance, it may be the effect of habit, and amongst other causes may be owing to children being placed in the cradle, or carried improperly, so that the light, and other objects that forcibly attract their notice, are too frequently on the same side. The remedy in either case, as far as it may become such, is obvious, differing nothing from the intentions already noticed in the chapter on squinting; every thing should be so contrived as may tend to draw the head to the other side, and especially such things as

as may have a sudden and forcible operation on the muscles, by producing strong voluntary motions. It may not, perhaps, occur to every one, how much may be effected by such means. Several striking instances of it, however, have been met with ;* and we daily observe similar effects of a certain position in flowers and shrubs, which without any help from the hand, turn about, obedient to the air and sun operating upon their internal structure.

* An Embassador from *Morocco* being at *Paris* went to see the *Charity-Hospital*, where passing the ward for the wounded, six of them who had not stirred for several months before, rose up and came to the Embassador, to the great surprise of the whole hospital ;† curiosity or surprise effecting that, which the most powerful medicines could not, in so short a time.—The like circumstance, is reported to have taken place very lately from a fire happening in the house where an elderly lady had long lain bed-ridden ; who perceiving the fire, suddenly rose up from her bed, without any assistance, and ran into the street.

† Histoire de l'Ambassadeur de Maroc, Envoye au Roi de France, en 1682.

The next observations respect the back and shoulders—Some young children, naturally well-formed, acquire after a while what is termed round-shoulders; the vertebræ of the neck and back projecting too much, and forming an unsightly curve.

The morbid affection of this part has been mentioned already; I have only to notice here a change arising merely from some bad habit or custom, through an improper manner of *sitting* or *standing*. In regard to the former, it may be observed, that the soft concave-bottomed chairs, in which young children usually sit, are on many accounts improper for their years, who should always make use of a flat and hard seat, and generally without arms, as directed for the prolapsus ani; which complaint it would have a tendency to prevent. But in the hollow-bottomed chairs children find themselves obliged to recline in one way or other, or to be making certain exertions for keeping themselves upright, and preserving an equilibrium of the

the body; and it is obvious, that either a bending posture, or the efforts necessary to avoid it, if often repeated, may become hurtful to weakly children.

An improper manner of *standing*, though less frequently a source of this kind of mischief, on account of the position being more frequently varied than in sitting, is, nevertheless, capable of giving an awkward turn to the back and shoulders, as well as to the feet. We are creatures of habit, both in respect to our bodies and minds, so that to whatever we may have for a little while accustomed ourselves, we have an increasing propensity; and when the habit is once formed it is with difficulty broken. Children should therefore be early accustomed to stand very upright, instead of being suffered to lean upon whatever may happen to be near them, as they are frequently disposed to do.

Should one of the shoulder-blades *project* more than the other, the child should lie as much as may be on the contrary side; as the shoulder upon which one lies

always projects beyond the plane of the back. When the shoulders themselves happen to be too high, a child so disposed should never be suffered to sit in an elbow-chair; nor should any child sit before a table, that is either much too high or too low for the seat in which he may be placed, especially if it be for the purpose of reading, writing, or any other employment that may engage him for any length of time. But if one of the shoulders be *higher* than the other, the child should frequently be directed to stand only upon the foot of that side, at least to bear his weight chiefly upon it; by which means, the shoulder that is too high must necessarily fall lower, and the other be raised: or a small weight may be put upon the shoulder that is too low, which will incline the child to raise it up. Or he may be caused frequently to carry a light chair, or such like play-thing, in the hand of that side, which will have the same effect. The like means should be used when one hip is higher than the other,

other, which is both a very common and peculiarly unfortunate complaint.

Another easy and efficacious means of rectifying the shoulders, is to make the child support himself with a very short cane on the side where the shoulder is too high, which will oblige him to lower it; and at other times, to put one that is too long for him into the other hand, which will raise the shoulder on that side. He may likewise often sit in a chair with two arms, one of them being made a little higher than the other.

These and other similar means may be very easily complied with, and several of them so managed as to be made a sort of play or amusement to the child; and if properly persevered in, will correct many deformities that have originated merely from bad habits, as well as conspire with other contrivances to remedy such as may depend upon a slight mal-formation.

The *feet* of children, it has been said, are likewise liable to receive an improper

turn; and this may arise from habit, as well as from original mal-formation, which has already been noticed. Children when conversing with those with whom they are familiar, seldom stand firmly on their feet, but are apt to lean upon one side of them, so as to bear almost upon the ankle, instead of the soles of the feet. By degrees, this habit is not only increased, but the tendons themselves are disposed to contract, or those on the opposite side become weakened. In the like manner, by standing upon the toes, the tendon of the heel, in time, becomes shorter, as is manifest in every woman who wears very high-heeled shoes. To obviate the former, little more is required, than to correct the child's manner of standing, by teaching him to bear firmly on the bottom of his feet: or if a foot be turned very much to either side, the sole of the shoe may be thickened upon the side on which the child bears. If by treading upon the toes, the heel is become contracted, the heel-

piece

piece should be taken off from that shoe, instead of its being raised; as hath sometimes been very improperly done. Beside this, such children should be frequently caused to walk up steep ascents, by which they will be obliged to bear up the fore-part of the foot, whereby the tendon of the leg will be stretched, and the heel must fall lower.

Most of the remedies proposed for these little disorders, will have another advantage, as they necessarily inculcate exercise; in favour of which so much has been said: the great neglect of it, especially among the poor, is daily lamented by every man of observation and feeling, and the more so, as it is a Good they cannot always command.

If I had not already far exceeded the bounds I had intended, I should be induced to say something on the Manner in-which Exercise becomes so beneficial to children—Let it suffice, however, to extract a few of the pertinent and elegant remarks

marks of DESESSARTZ* on this head, whilst I more briefly observe, that Exercise tends

* "La liaison et la dépendance que l'auteur suprême de la nature a établies entre toutes les parties de ce composé merveilleux, sont si intimes, que le Prince de la Médicine nous a representé le corps animé, et jouissant de ses fonctions, comme un cercle dans lequel on ne peut reconnoître ni commencement, ni fin.—En effet, les instrumens destinés à la chylification tirent toute leur force des organes de la sanguification, ceux-ci des nerfs et du fluide qui'ls contiennent: et ce fluide (si nous en croyons le système le plus universellement adopté, et auquel il manque peu de chose pour être démontré: ce fluide) tire son origine du sang, et le sang des alimens que nous prenons tous les jours.—De la constance et de la régularité de fonctions aussi différentes et aussi multipliées dépendent notre santé et notre vie. Il ne suffit pas de prendre des nourritures, il faut qu'elles soient bien digérées, changées en sang, et ce sang doit être assez travaillé pour fournir non seulement la lymphe nourriciere de tout le corps, mais encore un fluide trés-subtil qu'on appelle fluide animal. Chaque liqueur doit être separée dans ses glandes, et celles que la nature rejette comme inutiles et dangereuses, doivent être poussées au dehors.

Or, rien n'est plus propre à faciliter et a perfectionner toutes ces opérations, que l'Exercise. Si nous jettons les yeux sur notre corps, nous y appercevrons une multitude

tends to push forward the blood through the small vessels, and to unfold them in the manner nature has designed them to be extended, in order to promote the growth of the infant, whilst it preserves the blood in a proper state of fluidity, and promotes both the Secretions and Excretions; which are the next things it was proposed to consider.

multitude de vaisseaux qui sont entrelassés les uns dans les autres, serpentans entre les fibres musculaires, à la pression successive desquelles ils doivent une grande partie de leur movement et de leur action sur les fluides. A mesure que les muscles entrent en jeu, ils produisent des secousses reiterées sur les vaisseaux sanguins, qui se communiquent dans tout le système artériel et veineux. Ces secousses non seulement procurent aux fibres la force, et la souplesse, qui caracterissent leur bonne constitution, mais elles broyent, atténuent et subtilisent les liquides contenus dans les vaisseaux, achevent la transmutation du chyle en sang, en lymphe, et en fluide animal; la circulation est plus libre, les sécrétions se font mieux, et plus uniformément et la digestion en devient plus parfaite."—*Traité de l'èducation corporelle des Enfans en bas Age.*

RETENTION *and* EXCRETION.

EVERY medical reader will be sensible how greatly health depends upon a due proportion between the daily supplies, and the various discharges of the body: the latter will vary according to the diet, age, and particular mode of life of each individual. The excretions of infants, however, insensible perspiration excepted, are chiefly from the bowels and bladder; but the latter is not very liable to disorders. After what has been already advanced under the head of *Diseases*, it will be sufficient, therefore, to say, that the retention of urine during early infancy is chiefly from the birth, and is usually removed by applying a bladder of hot water to the belly, and gentle rubbing with a little warm brandy, with oil of juniper and oil of almonds, or an onion; and throwing up a clyster: or should these fail,

fail, the infant may be put up to the breast in a pan of warm water, and take a spoonful of marsh-mallow, or parsley, or wild-carrot-tea, sweetened with honey, with the addition of two or three drops of the spirit. æther nitrosi. This, if there be no mal-formation of parts, will generally produce the desired effect in the course of a few hours; though cases have occurred in which infants have voided no urine for the space of four days, and have suffered very little inconvenience: I have even known once instance of the suppression continuing for five days; and it is remarkable, that two former infants in this family voided no urine for three days. Should the suppression, however, continue during two complete days, the following cataplasm may be applied warm to the region of the pubis.

Take of parsley and mallow-roots, leaves of cresses, and juniper-berries, of each a handful, and of the roots of garlic one ounce; boil them slowly in water, or in wine, to the proper consistence for a poultice.

tice. On the other hand, the sudden application of cold to the regio pubis has sometimes produced an immediate good effect. Where all these means have failed, and the infant been in much pain, I have directed a clyster with a few drops of laudanum, which has presently removed both the pain and suppression.

As in adults a suppression of a very distressing kind sometimes occurs merely from a spasmodic stricture of the urethra; and not only resists for a length of time the ordinary means of cure, but is found to recur again after a temporary removal; it may not be amiss just to notice it here, as the complaint may, possibly, be met with in robust youths, although I have never yet seen it. The remedy for it is also very simple, and I believe newly discovered, and first announced by Mr. CLINE,* consisting only in the tinctura ferri muriati, which he advises in the dose of gtt. x, to adult persons, every ten

* *Medical Records and Researches.*

minutes

minutes, till some relaxation shall take place; which generally does in the course of an hour.

Some of the old writers have spoken also of incontinence of urine, arising from weakness of the sphincter of the bladder; but I have never met with it in early infancy. They prescribe agrimony and myrrhe, and direct astringent fomentations of red wine to the belly, perinæum, and loins.

The present observations are therefore chiefly confined to the Bowels, which would call for a scrupulous attention in this place, if so many things relative to them had not been discussed in a former part of this work. It were needless, therefore, to say more, than that (generally speaking) infants are rarely healthy long together, who have not two or three stools every day; or should they be more, for the first three months, if the child be brought up to the breast, and the nurse have a sufficiency of milk, it will generally thrive the better. The

stools

stools likewise ought to be loose, of a yellow colour, free from lumps, or curdy matter, neither of a very acid, nor fetid smell; and should come away without griping. When children are about a year old, or perhaps earlier, pains should be taken to procure one stool at least every day, as well periodically, as constantly; and for this, the morning is most adapted, and after breakfast, by which the stomach and bowels will be stimulated. To this end they should be set on the chair, and not suffered to play until they have had an opening, for which they should strain, till at length it becomes customary, which may be easily effected; and by which we shall gain a point, with respect to the health of children. On the other hand, if an infant is brought up by hand, the danger generally lies in the other extreme, such children being disposed to be purged, and to have griping and sour stools, from the acescent, and often indigestible nature of their food, especially if fed by the spoon; and therefore require an early attention

tention when their bowels are disposed to be open, and their food to be changed, in the manner directed under the article of Purging.

The PASSIONS *of the* MIND.

THIS is the last Article mentioned as included in the *Non-naturals*, and on which I shall be very brief, it being the happiness of Infants to be very little affected by them. This article can, therefore, relate to them merely in regard to their mode of expressing such passions, and principally respects Laughter and Crying. The former, if long kept up, or very violent, may not only induce the hiccough, but it is said, may even throw an infant into fits. The latter is, indeed, much oftener suspected of being mischievous; and chiefly by occasioning fits, or a rupture: the excess of both these affections should, therefore, be guarded against. Moderate, and not too frequent Crying, however,

ever, ought not to be alarming; and, indeed, a variety of considerations induce me to believe, that this expression of the passions in Infants is not only much more harmless in itself than is generally imagined, but is also, in some respects, salutary. The first cries it makes we know to be so, and that children recover from the paroxysms of some complaints (as was mentioned in regard to the Croup) by an effort of this kind. It is evident likewise, how very much health depends on a free circulation of the blood through the lungs, and on their free expansion from the dilitation of the bronchial vessels. But as new-born infants are incapable of giving themselves any exercise, and indeed, of receiving that kind which tends to promote such an effect, I have conceived Crying to be an effort which Nature may have wisely substituted in its stead.* Whatever is truly natural I al-

* Fletus moderatus pueris non obest—pectus dilatat et calefacit. PRIMEROS. See also *Aristot. Politic. Lib.* vii. C. 17. where the idea is supported more at large.

ways

ways conceive to be right, though every thing, is capable of being abused, and the most beneficial dictates of nature may be exceeded. I am satisfied, however, that the pacifying of children by improper means, and especially cramming them with food when they are not hungry, (against which so much has been said) occasions far greater evils in thousands of instances, than ever were produced by the irritation from Crying. The cries of infants, however, are very commonly plaintive; and as they seem to argue distress, cannot but create it in every person of sensibility around them. The nurse, therefore, who can with calmness, hear an Infant cry, without attempting to pacify it, by every proper mean, is a monster in human shape, unfit to be trusted with the care of any animal being, much less with a tender, helpless creature, whose only language, by which it can express its wants or its sufferings is its TEARS.

I cannot take my leave of the reader without offering one apology more for

having dwelt so long on this, and some other heads less important than the rest; my motive has been the desire of instructing, though in some instances at the risk of tiring, or otherwise displeasing; but practitioners who feel as parents, will endeavour, by every means, to lessen a mother's fears as far as they may appear to be needless, wherever no other Remedy can be offered.

I shall conclude by observing, that, though the Passions of the Mind refer so little to Infants, they relate very materially to the Wet-nurse; who besides endeavouring to keep her spirits as calm as possible, ought to be exceedingly careful not to put a child to her breast, when under the influence of any violent passion, of whatever kind it may be, the bad effects of which have already been instanced under the head of diseases. And I shall think myself well recompensed for the trouble I have had, if this, or other hints, may prove the means of lessening the dangers of the infant-state, and the consequent

consequent sad fatality that attends it; as well as of abating the anxiety of the fond mother, who after having brought her tender charge into the world with sorrow, is pierced with double pangs at its leaving it.—An event which, as experience warrants me to say, may by art and good management, be often prevented, the author ardently hopes, that both parents and practitioners may have fewer occasions to lament.

AN ALPHABETICAL LIST OF Medicines recommended in this Work, TO WHICH The COLLEGE of PHYSICIANS have given *new* Names.

NEW NAMES.	*Names formerly in Use.*
A.	
ACIDUM muriaticum.	Spiritus Salis marini.
Aqua Ammoniæ.	Spiritus Salis ammoniaci.
Aqua Ammoniæ acetatæ.	Spiritus Mindereri.
Antimonium tartarisatum.	Tartarum emeticum.
Aqua Cupri ammoniati.	Aqua Sapphirina.
Aqua Kali puri.	Lixivium saponarium.
Aqua Kali præparati.	Lixivium Tartari.
Aqua lithargyri acetati.	Extractum Saturni.
Aqua lithargyri acetati composita.	Aqua vegetabilis minera-lis.
Argentum nitratum.	Causticum lunare.
C.	
Calx Antimonii.	Antimonium calcinatum.
Catechu.	Terra Japonica.
Confectio aromatica.	Confectio cardiaca.

Emplastrum

E.

Emplastrum Ladani.	Emplastrum stomachicum
Emplastrum lithargyri.	Emplastrum commune.

H.

Hydrargyrus muriatus.	Merc. corros. subl. albus.

L.

Liquor volatilis cornu Cervi.	Spiritus volatilis cornu cervi.

N.

Natron præparatum.	Sal Sodæ.
Natron tartarisatum.	Sal Rupellensis.

P.

Pulvis è Scammonio cum Calomelane.	Pulvis Basilicus.

S.

Spiritus Ammoniæ compositus.	Spiritus volatilis aromaticus.
Spiritus camphoratus.	Spiritus vinosus camphoratus.
Sp. æthæris vitriolici	Spiritus Vitrioli dulcis.
Spiritus atheris vitriolici compositus.	Liquor anodynus mineralis.
Spiritus ætheris Nitrosi.	Spiritus Nitri dulcis.

T.

Tinctura Aloës composita
Elixir Aloës.
Tinctura Catechu.
Tinctura Terræ Japoniæ
Tinctura Gentianæ composita.
Tinctura amara.
Tinctura Opii.
Tinctura Thebaica.

U.

Unguentum Calcis Hydrargyri albæ.
Unguentum è Mercurio præcipitato.
Unguentum Cerussæ acetatæ.
Unguentum saturninum.
Unguentum Hydrargyri nitrati.
Unguentum citrinum.

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